(Re)New Your City, New York City: Transporting Transformation Hubs

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Rayn Riel

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Advisor: Professor Weiping Wu, Department of Urban and Environmental Policy and Planning
Reader: Professor Daniel Abramson, Department of Art and Art History

ABSTRACT: New York's Metropolitan Transportation Authority (MTA) is constantly running trains, but it is also constantly running a deficit. Unlike profitable transportation companies, such as the Hong Kong Mass Transit Railway (MTR), the MTA has few valuable real estate assets which could be adequately transformed into transit-oriented and transit-owned joint development hubs. Similar to other U.S. public transportation agencies, space for pragmatic and profitable commercial activities – including shops and offices operating on agency-owned land – is limited to a few select stations, yards, concourses, and passageways, because most profitable assets from private predecessors were sold decades ago. However, while the MTA's ability to remain revenue-positive or self-sufficient through real estate development is stymied, the MTA has been capitalizing upon its few existing assets for additional revenue. This process, however, in coordination with the City of New York in order to develop value capture mechanisms, is lengthy and cumbersome. The MTA has not developed the resources needed to develop property. This Senior Honors Thesis elucidates how the MTA can overcome organizational barriers in order to contextually 'transport' the MTA's limited portfolio of assets into 'transformation hubs', and in order to do so, advocate for a privatized, profitable, and independent real estate development division of the MTA, chartered for real estate development. While there is 'room' for improvement, institutional barriers ranging from NIMBYism and a fear of density to antiquated zoning laws, financing requirements, and a lack of communication among the City, State, MTA, and developers would need to be transcended through coordinated reformation efforts. The MTA's collective mindset must be renewed for a 21st century narrative, in which the MTA also considers itself a top tier real estate developer.

KEY WORDS: *transportation planning, public-private partnerships, transit-oriented development, joint development, value capture, real estate, New York City, Metropolitan Transportation Authority (MTA)*

"New York never stops. From morning-rush commuters to late-night club-goers, from school children on subways to seniors on buses, millions of people rely on the Metropolitan Transportation Authority (MTA) to get them through their daily lives. Without a robust and well-maintained network of railroads, subways, bus routes, bridges, and tunnels, New York as we know it could not function."

Thomas F. Prendergast, Chairman and Chief Executive Officer, MTA

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER ONE: INTRODUCTION

1.1: A BRIEF HISTORY OF TRANSIT FINANCE IN NEW YORK CITY

Most Americans did not own cars in the early 20th century. There were no trucks and there were no planes. Instead of taking the highway or heading to the airport for a long distance commute, people went to the train station. Indeed, railroad transportation was essentially the only convenient way to get around, especially when compared to horse-drawn carriages. Intercity passenger railroads were profitable. Commuter lines were profitable. Privately-owned street cars were built alongside new real estate developments instead of parking lots. As the premier technology of the era, profitable elevated railroads connected neighborhoods like never before. Suburbs were connected by rail lines and trolley lines. Even New York's private subway operators – the Interborough Rapid Transit Company (IRT) and Brooklyn-Manhattan Transit Corporation (BMT) – were profitable until the Great Depression, though they were forced to maintain a 5 cent fare by the City of New York. There was not yet Amtrak, not yet the New York Metropolitan Transportation Authority (MTA). No doubt, at times the government would help with generous bonds, land, subsidies, and public-private partnership (PPP) contracts, but in general, intercity railroads and public transport companies were independent and profitable.

Once (auto)mobility took over socially, economically, politically, and physically, these railroads could no longer compete. The Great Depression, coupled with numerous contractual regulations (such as the City mandating that the IRT and BMT maintain the 5 cent fare) spelled bankruptcy for the private operators of the subways. The City took over the subways, and eventually the State's MTA took over from the bankrupt City. Believing that transportation was a human right instead of a private good, the City had forced the IRT and BMT to keep a one nickel fare, even after two wars, the Great Depression, and triple-digit inflation. They also forced

them to build into rural areas of the Bronx, Brooklyn, and Queens, in order to allow the poor to vacate crowded Manhattan slums (Gelinas, 2005). While the city helped fund these expansions, some of these routes in the Bronx literally swept across farmland. The IRT moved trains, and ideally a lot of people as well. In these peripheral areas, they were losing money. Yet the city forced them to keep the fare at a nickel, while the government built highways and sent white people sprawling into the suburbs. Ridership declined. Service deteriorated. The IRT and BMT, once the crown jewels of the capital of the 20th century, were finished.

Mayor LaGuardia bought the assets of IRT and BMT, thinking that unification would allow for greater efficiency. He did not think that subsidizing transit would work, because that would allow for "financial waste and irresponsibility" (Gelinas, 2005). If it is not their money, after all, they would spend it so that they could get even more. But he did not realize that he destroyed incentives for efficiency. Without competition, and with the increasing power of the Transport Workers Union (TWU), the subways spent more and more on labor while deteriorating at the same time. Greater costs, greater public subsidies, and greater operational deficits have been the result of a lack of compromise and an anti-capitalist philosophy.

Public transportation authorities were designed to operate transit, but not to own the assets that had been developed by prior companies. The grandeur of railroad terminals arguably decreased as taking flight became the transportation mode of the elite, and as white flight became the response to the Great Migration of African-Americans to New York and its subways. America's culture of individualism hybridized itself with car culture, which has been idealized as the free and independent means of travel, compared to the herded, dirty, crowded subways. For instance, highways and airlines today also require government funds, yet funding for these systems are termed 'investment', whilst funding for transit and national railroad systems are

termed ‘subsidies’ (Vuchic 2005, 184). Moreover, “‘in European communities, public transportation is not viewed as a ‘social service’ for people who are unable to afford private means of transportation… Instead, it is regarded as a solution to protect and preserve the environment, to reduce automobile use and traffic congestion, and to improve mobility of the overall population’” (Vuchic, 2005, 184). This highlights the stigma against public transportation in the United States, according to Vukan Vuchic, UPS Foundation Professor of Transportation Engineering and Professor of City and Regional Planning at University of Pennsylvania.

Private railroads tried to stay afloat by selling their assets in the mid-20th century, thus creating Madison Square Garden above the contemporary Pennsylvania Station, and the Pan Am Building above Grand Central Terminal. The destruction of Pennsylvania Station sparked the beginnings of a preservationist movement which saved the nearby beaux-arts Grand Central Terminal from complete destruction. However, the movement was too late to preserve the dominance of the Helmsley Building on Park Avenue. New York Central Railroad, which owned Grand Central Terminal and the Helmsley Building, sold air rights for the construction of the Pan Am Building (now known as the MetLife Building) above the terminal (see Figure 1.1). Donald Trump bought the Penn Yards on the Upper West Side for the construction of Trump Place. Indeed, the Jet Age had arrived alongside the Interstate Highway system, and unfortunately, no air right revenue streams were enough to keep Pennsylvania Railroad and New York Central Railroad afloat, even after they merged together to become Penn Central. Trucks took freight revenue, and premium high-speed train travel became the lore of airlines. When the US Post Office decided to no longer ship mail on the railroads, it was the last straw. When Penn Central filed for bankruptcy a few years later, intercity passenger routes were to be transferred to Amtrak and freight routes were to be transferred to Conrail, a nationalized freight carrier.

Figure 1.1: *MetLife (L) and Helmsley Building (R) Joint Development*

Thus began the era of the MTA, which now operates Grand Central Terminal, even though the terminal is owned privately by Argent Ventures due to a series of real estate acquisitions. The MTA is North America's largest transportation network, and it moves approximately 2.4 billion New Yorkers a year on its subways, buses, railroads, bridges and tunnels. Chartered by the New York State Legislature in 1965 as the Metropolitan Commuter Transportation Authority, it was initially created by Governor Nelson Rockefeller to purchase and operate the bankrupt Long Island Rail Road. The MCTA dropped the word "Commuter" from its name and became the Metropolitan Transportation Authority (MTA) in 1968 when it took over operations of the New York City Transit Authority (NYCTA) and Triborough Bridge and Tunnel Authority (TBTA), now MTA New York City Transit (NYCT) and MTA Bridges and Tunnels respectively. The agency also entered into a long-term lease of the Penn Central Transportation's Hudson, Harlem and New Haven commuter rail lines, contracting their operations to Penn Central, until that company's operations were folded into Conrail in 1976. The MTA took over full operations in 1983, as the Metro-North Commuter Railroad. Governor Rockefeller appointed his top aide, Dr. William Ronan, as Chairman and CEO, who served in this post until 1974 (Chan, 2015). Dr. Ronan outmaneuvered Robert Moses, the power broker of

the automobile, consolidating Moses' former empire into the MTA in order to fund public transportation. He also raised fares to 30 cents from 20 cents in 1970, and to 35 cents in 1972 (about $2 in today's money), receiving countless death threats, but still doing what had to be done for the future of the city and region.

But the MTA does not own Penn Station; Amtrak owns it due to its role as an inter-city hub. Now, the MTA leases space for the Long Island Rail Road, and New Jersey Transit also leases space. Reverberations of these deals remain evident today. The nearby post office, which is being reconstructed to serve Amtrak in the future, was located across the street from Penn Station due to the fact that railroads had carried all USPS mail. There are also plans to move Madison Square Garden and redevelop Penn Station. At Grand Central, there are also air rights controversies surrounding Grand Central Terminal, owned by Andrew Penson, and One Vanderbilt, a proposed skyscraper part of the East Midtown Rezoning on 42nd Street.

The MTA provides service for one-third of the transit riders in America, employs over 67,000 workers, covers an area of approximately 5,000 square miles (MTA Transportation, 2015), moves the largest regional economy in the richest country in the world, and moves 8.7 million customers a day (MTA Capital Program, 2014). One in three transit rides in the U.S. are on the MTA network, and MTA ridership exceeds the next 16 largest U.S. transit networks combined. According to the Tri-State Transportation Campaign (TSTC), the MTA spends approximately 11 billion dollars on operational costs yearly, with an additional 5 billion dollars spent on maintenance and improvement (MTA Transportation, 2015). While fares and tolls provide a significant amount of revenue for the public authority, it is far from enough for self-sufficiency, let alone profitability. Akin to all public transportation agencies in America, the MTA needs subsidies and support from local, state, and federal sources (see Figure 1.2).

Moreover, because the state agency operates New York City's subways, funding is constantly being negotiated between the City and State, especially for capital plans (Flegenheimer, 2015). The M.T.A. already owes $34 billion, more than the national debt of dozens of foreign countries (Flegenheimer, 2015).

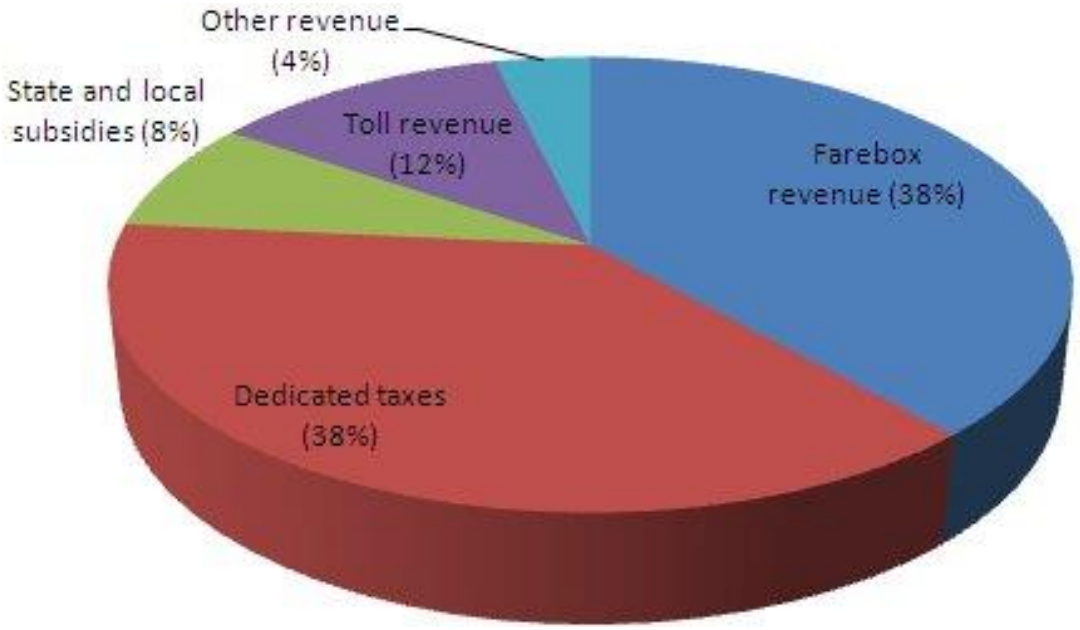


Figure 1.2: *MTA Revenue Sources, 2010 (Tri-State Transportation Campaign, 2010)*

According to *Crains New York Business*, the MTA, in 2010, implemented service cuts and increased fares, yet still had an unhealthy budget (Smerd, 2010). Real-estate tax revenue was far below expectations, with $430 million from $393.5 million in 2009 (Smerd, 2010), yet the MTA has benefitted from the real estate rebound after the Great Recession. The MTA received $732.4 million in 2015 from mortgage and property-sale taxes, which is 40% more than the MTA budgeted for; this extra $211.8 million, however, "is miniscule compared with the agency's major problem: a $14 billion capital-plan deficit" (Hawkins, 2015). According to Andrew Hawkins at *Crains New York Business*:

> The MTA collects two types of taxes from property sales in the city: the mortgage-recording tax (consisting of two separate taxes on mortgages recorded in the MTA's 12-county service area)

> and the urban tax (imposed on commercial-property and apartment-building transactions in the five boroughs). Those taxes, in addition to an array of other state, regional and local taxes, subsidies and fees, and fare and toll collection, comprise the MTA's revenues. (Hawkins, 2015)

In 2015, the MTA has received $202.4 million from the mortgage-recording tax this year, which is 11.3% more than the MTA's budget allotment of $181.8 million. Also, the MTA received $530.1 million from the urban tax, or 56.4% more than the $338.9 million originally budgeted. Finally, the "MTA received $130.7 million in total real estate tax revenue just in the month ending in mid-June, or 50.6% more than originally expected" (Hawkins, 2015). However, the MTA is wary of these fluctuations, and is not planning on using the increased funds to restore eliminated subway and bus routes, because a new downturn could leave the agency without the resources needed to sustain operations. In 2005 and 2006, the urban tax surged, resulting in $900 million in 2007, which was nearly twice the amount anticipated by the MTA. As a result, the agency began "resurrecting plans for a circumferential 'Triboro X' line", and they even "offered free rides on Christmas". Then, after the economy collapsed, annual revenue plunged by more than $1 billion and the urban tax received $149.7 million in 2009 (Hawkins, 2015). Clearly, this system is unstable and even in good times, the MTA needs additional funds to continue operations and expansion.

While the MTA cannot be profitable in the current environment, some public transportation corporations can be quite successful due to real estate assets. In fact, American railroads of the early 20th century maintained a profit partly due to the transportation hub real estate assets that they developed, owned, leased, or maintained vis-à-vis value capture and joint development. Pennsylvania Railroad built Hotel Pennsylvania across from their iconic station in New York. Meanwhile, New York Central Railroad built the Helmsley Building at Grand Central Terminal, whilst developing an entire neighborhood, known as Terminal City, atop its

rail yards (Gray, 2012). Even the former Hudson and Manhattan Railroad, which built the network that the Port Authority of New York and New Jersey's PATH subway operates today, developed the predecessor of the World Trade Center, Hudson Terminal, atop its hub in Lower Manhattan. Railroads built similar structures across the country, such as the iconic Michigan Central Station in Detroit, because they were private entities investing for their success. They did not yet have to compete with cars, trucks, planes, and the vehicular suburbanization of the latter 20th century. When these railroads went bankrupt, the majority of profitable assets that had been owned by them were sold before remaining infrastructure was transferred to the public. Akin to other American public transportation agencies, space for pragmatic and profitable commercial activities – including shops and offices operating on agency-owned land – is limited to a few select stations, yards, concourses, and passageways.

So why is it, then, that only one block from the Port Authority's T.O.D. World Trade Center, in the heart of Lower Manhattan, the MTA has built its own transportation hub — the Fulton Center — at only a few stories tall? It's not just the Fulton Center, either; the MTA's structures — from stations to ventilation towers — are routinely only a few stories tall in healthy neighborhoods with booming real estate markets. Why would they not want more density, thereby fueling more ridership and increasing real estate revenue? Why do they not build taller?

1.2: RESEARCH QUESTIONS AND ANSWERS

When a transportation agency develops its property in coordination with a private developer, in order to build and own or lease shopping centers, offices, apartments, and other amenities, it is termed joint development. This is an old practice that has been brought back to life lately through the disposition of the MTA's Hudson Yards in West Midtown and Atlantic Yards in Brooklyn. Developers are building offices, shops, and apartments atop MTA property. However, there are still many properties that have not been developed fully. This thesis will illuminate the factors that contribute to this lack of development activity. This thesis will also offer solutions that could induce a streamlined approach to joint development.

While private railroads of the past used real estate to finance operations and improvements, the political economy has changed in New York. These railroads went bankrupt due to various reasons, including competition from highways and airports, as well as the termination of USPS contracts. In New York, the Great Depression, coupled with the mandated 5 cent fare (agreed upon prior to the inflation of World War I), brought the private subway operators – the IRT and BMT to their knees. Even now that New York has rebounded and the MTA is seeing record ridership, the MTA needs subsidies and support because it is not seeking profit. Transit-oriented development will have marginal impacts on the MTA's finances.

Yet privatized subways in Tokyo and in Hong Kong are profitable due to high ridership. Parts of Manhattan are denser than Tokyo and Hong Kong, but sections of New York's outer boroughs are less dense than Los Angeles. In Hong Kong, the subway, the MTR Corporation, acts as a real estate developer and transit operator, funneling riders into its trains through its malls, apartments, and offices. New York subways were simply not built below company-owned shopping centers, and China operates under a lease-hold system, with the Hong Kong central

government leasing land to the MTR for development. In America, with private property rights, this practice cannot be emulated. While the MTA cannot 'transport' ideas, it can 'translate' them. Transit-oriented development will have a marginal impact on the MTA's finances, just as joint development could not save private railroads from bankruptcy. The political economy of the country has changed, and the MTA operates a 100-year-old system with high costs.

Nevertheless, T.O.D. stands on its own as a way to reshape New York into a more livable, sustainable city, and the revenue provided will still help with the MTA's maintenance and expansion costs. As it stands, the MTA does not have the resources needed to develop property. There are only three professionals in the Transit-Oriented Development (TOD) Group at the MTA Real Estate Department, meaning that the MTA needs to outsource tasks to countless contractors. The authority also has to deal directly with the public and with a fear of density, as well as antiquated zoning laws, financing requirements, and a lack of communication between the City, State, and MTA. The legal hassles that the MTA would need to pass in order to develop residential property, for instance, would far outweigh the benefits. Governments tend not to do a good job at speculative development, with additional regulations and costs obliged, such as union labor. Most of the MTA's yards and bus depots are active assets and cannot be shut down in order to be rebuilt or overbuilt. Only a few – such as the Hudson Yards – were built with enough room between the tracks for support structures, and still, it is expensive to move around machinery on an active yard and deck the site. In far-flung locations in the outer boroughs, the real estate is just not valuable enough to pay for decking. Even if it was, zoning would need to be changed, because most of the MTA's assets are in manufacturing districts, which limits the height of buildings and lowers the land value.

For these reasons, the MTA tends to stick with transferring development rights (air rights), receiving lump sums from developers so that they can build taller on adjacent lots. The MTA has been working with the Department of City Planning and the Economic Development Corporation, as well as in various other P3s in order to dispose of existing assets. After all, transportation finance is a serious problem in New York and throughout the United States.

Figure 1.3: *Lack of Joint Development at Prospect Park Station in Brooklyn*

As such, this thesis addresses the following questions:

1. What's the current status of revenue generation on MTA-owned station properties?

A. How much revenue is gained from retail at Grand Central Terminal?
B. How much revenue is projected from retail at the newly opened Fulton Center?
C. Why has the MTA not bought Grand Central Terminal and its associated air rights?
D. How much revenue did the MTA receive from selling air rights at Hudson and Atlantic Yards for the 7 Line Extension to 34th Street and the LIRR Atlantic Terminal in Brooklyn?

2. What organizational barriers prevent the MTA from capturing revenue from real estate assets?

A. Why did the MTA not build more commercial space at the Fulton Center? Atlantic Terminal?
B. What are the problems inherent in the relationship between the MTA, the City, and the State?

3. How can organizational barriers be overcome in order to promote joint development at MTA stations?

A. How can the MTA learn from the MTR (Hong Kong, China)?
B. Where can the MTA begin implementing a value capture mechanism in the City of New York?

1.3: METHODOLOGY

This thesis utilizes a collection of books, journal articles, news articles, and websites concerning transportation planning, transit-oriented development, and transportation finance. In particular, value capture and joint development will be explored primarily within the context of New York City and the MTA. Sources were collected with the assistance of Tisch Library resources and during a research course taught by Tufts librarians as part of an inquiry for Senior Honors Thesis research. This course, Research for Success, equipped students with appropriate search and evaluation tools for appropriate purposes. Additionally, all contemporary photographs in the Americas, Africa, Asia, and Europe were taken by the author on urban planning research programs, with additional historical illustrations provided through research.

Site visits and interviews in Hong Kong were partly funded by the Tufts Undergraduate Research Fund. Moreover, approved by Tufts University's Institutional Review Board (IRB), interviewees provided their written consent in order for their name, business name, and title to be published alongside their expertise. An option to retain anonymity was also used by interviewees working for local government. Fifteen interviews were conducted online or on the phone, and also in Hong Kong. Interviewees included city officials, transportation planners, engineers, developers, educators, and historians involved with the Metropolitan Transportation Authority in New York City and the MTR in Hong Kong. Interviews lasted for, on average, thirty minutes, and the core questions involved development barriers facing the MTA compared to the MTR. Interviews were conducted on the phone or face-to-face, and rarely, through e-mail conversations. Essentially, interviewees discussed the factors contributing to the lack of development on certain sites in New York. Interviewees were selected through snowball networking, transportation e-list memberships, and LinkedIn, and included:

1. Aaron Donovan, Deputy Director for MTA External Communications
    - Telephone interview. 30 Jan. 2015.
2. Andrew Bata, Chief of Global Best Practices at MTA New York City Transit (NYCT)
    - E-mail interview. Feb. 2015.
3. Daniel Peterson, Former Arup Senior Transportation Engineer
    - Online interview. Dec. 2014.
4. Dorothy Chan, Senior Hong Kong MTR Manager
    - Personal interview. 9 Jan. 2015.
5. Ellyn Shannon, Associate Director, Permanent Citizens Advisory Committee to the MTA
    - Telephone interview. 13 Feb. 2015.
6. Jason Fane, Developer in Manhattan, Ithaca, and Toronto
    - E-mail interview. Dec. 2014.
7. Jay Walder, Former Managing Director for Finance and Planning at Transport for London, Former Chairman/CEO of the MTA, Former CEO of the MTR, and CEO of Motivate
    - Telephone interview. 27 Feb. 2015.
8. Jenna Hornstock, Deputy Executive Director at County Planning, Los Angeles County Metro
    - Telephone interview. 12 Mar. 2015.
9. John Tauranac, New York Historian and Subway Mapper
    - E-mail interview. Jan. 2015.
10. Kyle Kirschling, Senior Director of NYCT Performance Analysis Unit
    - Personal interview. 31 July. 2015
11. Robert Paaswell, Distinguished City College of New York (CCNY) Transportation Professor, Former Director for the CUNY Institute for Urban Systems, and Former Interim CCNY President
    - Telephone interview. 23 Dec. 2014.
12. Robert Paley, Director of T.O.D. Group, MTA Real Estate Department
    - Telephone interview. 23 Jan. 2015.
13. Sai-Ping Chin, AECOM Executive Director, Hong Kong
    - Personal interview. 9 Jan. 2015.
14. Subutay Musluoglu, Cartographer and Historian
    - Telephone interview. 20 Nov. 2014.
15. An anonymous high-level city official under former Mayor Michael Bloomberg.
    - Telephone interview. 5 Jan. 2015.

In order to answer these question, we must understand the current status of revenue generation on MTA-owned station properties, as well as the history of the MTA itself. Then, we must explore organizational barriers preventing the MTA from capturing revenue from real estate assets, and how these barriers can be overcome in order to promote joint development.

CHAPTER TWO: LITERATURE REVIEW

2.1 POWERS, IDENTITIES, AND IDEOLOGIES

The 2010/2011 UN-HABITAT Report, *State of the World's Cities 2010/2011 - Cities for All: Bridging the Urban Divide*, discusses economic divides, spatial divides, opportunity divides, and social divides. Where one lives has a big impact on job opportunities, social capital, and even physical, mental, and spiritual health. Jobs may be far or inaccessible without a vehicle. Everything is integrated through physical infrastructure. From community development, economic growth, education, and environmental issues, to housing, public health, nation-building, and foreign policy, physical environment helps to dictate social, economic, and political divides. Urban planning is highly contextual, dependent on local powers, identities, and ideologies, as well as local social, economic, political, and environmental factors. Transportation infrastructure is no different, and every transit system is built based on local conditions. It is what built empires (be it the British Raj in India or the American Transcontinental Railroad), and it alleviated national security concerns (such as through the Interstate Highway System).

These powers, identities, and ideologies have been focused on the personal automobile in the United States, and alongside high incomes and low fuel costs, have "greatly diminished the role of mass transit" in America (Guess 378, 2008), with less than two percent of passenger movements conducted by public transportation (Guess 2008, 378). While the private sector involvement in infrastructure investment in the 19th century overshadowed all other economic developments of the period (Grimsey, 2004), the growth of private, profitable railroads in the United States required public-private partnerships, and these policy-level partnerships developed "a set of rules for investment and operation in various transport modes such as urban transit, railroads, highways, and inland waterways" (Grimsey 2004, 8). However, some public transit

systems in the 21st century, disavowed of real estate assets and acting in competition with the Interstate System, "cannot be profitable because when service increases, fixed costs increase by a greater amount, including debt service, operations, supplies, maintenance, and salaries" (Guess, 2008). Indeed, "fares rarely will provide more than half of total revenue, and they are usually not market-rate, so as to provide a service to the poor and so as to relieve congestion" (Guess, 2008). For instance, the D.C. Metro receives 61.6 percent of its revenue through the fare box, which is less than only New York's system in the United States.

2.2: ROLES OF PUBLIC AND PRIVATE SECTORS IN TRANSIT

According to Simon Hakim in *Privatizing Transportation Systems*, publicly-controlled transportation removes the incentive to control costs, and removes consumer choice, allowing for organized labor to take control of the system and destroy any semblance of competition (Hakim, 1996). However, despite the potential for public-private contracts, and the "belief that the private sector can perform more efficiently than the public sector" (Hakim 5, 1996), public transportation cannot currently be competitive and profitable in the United States, just as the Interstate Highway System cannot be competitive and profitable. Yet:

> Around the world, rapid urbanization is creating serious mobility, access, safety, and pollution problems beyond the capacities of most urban transport systems to respond. Urban policymakers try to govern systems with increasing operating costs and limits on their ability to raise sufficient funds to replace aging facilities and rolling stock. Riders are displeased in many cities and attempt to escape to their automobiles. Increasingly, this option is also constrained by high gasoline prices, road congestion, and sitting in traffic jams for hours (George Guess, 2008)

Public-private partnerships (P3s) allow for the expertise and efficiencies of the private sector to be juxtaposed with the public sector. A small public transportation agency, for instance, may contract its operations to a private operator, theoretically because the private sector brings skills that the public agency cannot provide at similar costs. The agency would regulate the

private operator, making sure in its contract that it does not cut service to cut costs. However, these P3s often fail because the public sector does not know how to regulate the private sector, and because the private sector cannot think in political terms. According to Perry Davis, author of *Public-Private Partnerships: Improving Urban Life*, language is extremely important in order to craft an effective PPP, which are not a new phenomenon. In fact, "one hundred and fifty years ago Alexis de Tocqueville cited extra-governmental associations as America's legacy to democracy" (Davis 1986, 1). These partnerships can be implemented for public transportation's sake because "a crumbling social infrastructure – just like a deteriorating physical infrastructure – makes a poor environment in which businesses and business markets can thrive" (Davis 1986, 2). Yet "as partnerships require novel business approaches to civic needs, so does government require a fresh view of its role" (Davis 1986, 2). Moreover, according to Vuchic:

> The main goal of the public agency should be providing services the city and its residents need, rather than focusing only on optimal financial results of operations. Considerable economies of scale can be achieved by consolidation of many different lines, vehicle fleets, company managements, into a single agency. Network integration allows profits from heavily used lines to be used to support lightly used lines that are essential for area coverage, social, or other reasons. Governmental public policies can be better coordinated and subsidies controlled with a public agency than with many private companies (Vuchic 2005, 433)

Due to the lack of profit incentives in the public sector, America finds itself with "obsolete equipment, strong unions, and difficulties in contracting out services" (Hakim 1996, 20). In denser countries without a friendly atmosphere of car ownership, such as Japan, rail service is profitable and attractive (Hakim 1996, 18), and this was also the case 100 years ago in New York. Most American cities today, which are oriented towards the automobile, cannot cover investment and operating expenses, requiring direct or indirect financial assistance (Vuchic 2005, 435), but this was not true of New York in the early 20th century. The city helped to fund

subway systems, and contracted their operation to private companies. However, the city's regulations kept the private companies from raising fares, eventually spiraling into bankruptcy:

> The consolidation of the Manhattan Elevated Railway Company, the Metropolitan Street Company, and the IRT created a monopoly of fixed-rail rapid transit. This provided the rationale for the dual contract to fix the fare at five cents. The consequent constraints caused by a politically expedient fixed fare and wage inflation led maintenance to be deferred. The fixed fare destroyed the incentive for the companies to invest in quality, or even to maintain quality. The fixed fare also prevented expansion in that only those lines with very high ridership can be profitable if the fare is set too low. Lines which would have been economical at higher prices were not built. The transfer of ownership into the public sector compounded the problems. The incentive to control costs was removed and was replaced by the political need to placate an organized labor force (Hakim 289, 1996)

Today, the MTA's funding shortfalls are due to a lack of political will – such as an unwillingness to raise fuel taxes – but the MTA's budget is not the only transportation budget in dire straits. Nearly 25 percent of the nation's 596,570 bridges are considered deficient, with "eight percent of urban interstates and 30 percent of urban arterials in poor conditions", a consequence of a national transportation funding problem (Staley 2009, 169). Labor unions and their monopolistic powers force "excessively high wages and inefficient labor practices", while agency management may allow for technological obsolescence, "defeating the advantages of providing good service as the dominant goal" (Vuchic 2005, 433). Indeed, according to Michael Bernick and Robert Cervero in *Transit Villages in the 21st Century:*

> America's cityscape has increasingly turned its back on new mass transportation investments. Too many recently built light rail, heavy rail, and commuter rail systems in the United States feature stations enveloped by parking lots, vacant parcels, open fields, warehousing, and marginal activities. This stands in marked contrast to the colorful streetcar suburbs that sprung up along trolley lines around a century ago, or to much of urban Europe where apartments, shops, cinemas, and offices continue to cluster around rail transit stops (Bernick 1997, XI)

American railroads used to be financed privately, even in Los Angeles, where the Pacific Electric Railway system, owned by Henry Huntington, was built because "Huntington believed he could increase his fortune by coupling streetcar expansion with real estate investment – namely, purchasing inexpensive land on the metropolitan fringe and increasing its value through the provision of rail transit services" (Bernick 1997, 20). In Brooklyn, New York, many railroads were owned by developers before they were eventually subsumed by the City and State, and these developers constructed giant hotels and resorts on railroad property in Coney Island, where the masses retreated (see Figure 2.1). Vukan Vuchic, transportation expert, writes that since the 1980s, public agencies have been adopting "some forms and practices of private companies for greater operational efficiency" (Vuchic 2005, 299), and to reduce "political pressures and achieve competitive pricing, public agencies contract some sections of transit services to private operators" while retaining control "to ensure that public interest is not subjugated to short-term economic efficiency" and eliminate "competition, which tends to disintegrate transit networks and lower the quality of services (Vuchic 1999, 299).

Figure 2.1: Culver Line Depot in Coney Island, Brooklyn (Courtesy of CulverShuttle.com)

Many cities are returning to transit, such as Los Angeles, because transit has "great significance for reducing traffic congestion, offering alternative means of travel, and contributing greatly to the quality of urban life" (Vuchic 2005, XIII). Moreover, Vuchic's *Urban Transit Operations, Planning, and Economics* clarifies that the role of transit in developing countries is "even greater than in the industrialized countries because it serves a greater number of people and offers capacities that highway systems cannot provide in rapidly growing cities" (Vuchic 2005, XIII). While America was industrializing, railroads were also more important, because far fewer had other choices. Companies built extravagant stations, such as Penn Station and Grand Central, providing superb services (Vuchic 2005, 431). In Europe, many public transit companies operate privately with public assistance, or on specific routes with high ridership, or while operating freight, such as the German Deutsche Bahn (Vuchic 2005, 435).

According to Vuchic's *Transportation for Livable Cities,* Americans tend to demand less public transportation funding than peer countries, partly due to existing suburban densities and lifestyles, partly due to the lower economic and ethnic homogeneity of the population in urban areas, and partly because a "large segment of the population, along with many political leaders and decision makers, has never seen or experienced the modern, efficient transit services that exist in many peer countries" (Vuchic 1999, 171). As such, American cities, with a stronger individualistic and market-focused emphasis, face problems of "economic inefficiency, environmental deterioration, and unsatisfactory quality of life" due to "the inefficiencies and other impacts of urban transportation systems" (Vuchic 1999, XVII). Value capture cannot work without accessible transit in dense areas and without coordination between land use and transportation planning. In contrast, subways in Tokyo and Hong Kong are profitable because of high densities and associated benefits, unlike sprawling American cities (see Figure 2.2).

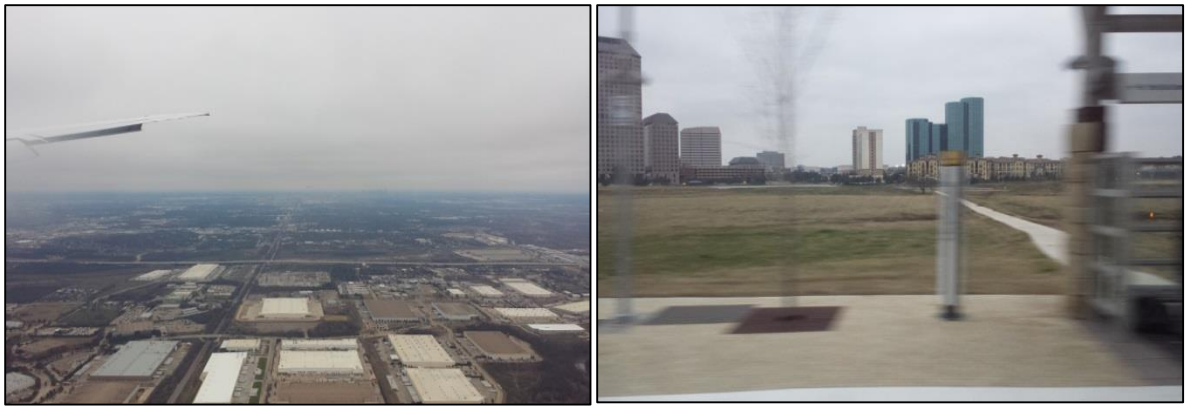


Figure 2.2: *Sprawl in Dallas, Texas*

2.3: VALUE CAPTURE, JOINT DEVELOPMENT, AND DENSITY

Transportation infrastructure impacts real estate prices. If a subway station in New York were to open up nearby one's home, the value of that home would be bound to increase. This increased value translates to increased property taxes, but the City does not necessarily *earmark* these funds for the MTA. The authority's funding is perpetually scarce and permanently unstable, dependent on the whims of politicians and on the economy of the City and State. This is why the MTA has been exploring value capture mechanisms, which would allow for the authority to measure property value increases due to their projects, and share the increased tax revenue from these sites. The authority also has been actively disposing of its valuable real estate assets, and working in public-private partnerships (P3s) to develop property.

Value capture and joint development are especially challenging in sprawling American cities, where transit-oriented development practices are difficult to coordinate. In the United States, Americans drive for 85 percent of their work and non-work trips, compared to 50 percent in Europe (Buehler, 2014). Older European cities, built for density prior to the mass ownership of the automobile, suffered after World War II, while America had ample resources and ample land to construct penetrative highways (Buehler, 2014). Corresponding land use and zoning standards allowed for vastly different urban fabrics across the pond, leading towards stronger

support for public transit in Europe, as compared to the individualistic-oriented United States. The American government has consistently encouraged single-family homes, and tax structures – as well as low fuel prices – incentivize consumption (Nivola, 1999). According to the Brookings Institution, "the diffuse pattern of urban growth in the United States is partly a consequence of particular geographic conditions, cultural characteristics, and raw market forces, but also an accidental outcome of certain government policies" (Nivola, 1999). The level of affluence in America, coupled with three and a half million square miles of territory, allows for decentralization to take root. Indeed, sprawl was America's post-war response to Marxist central planning in the Soviet Union. In order to avoid the typical post-war recession, the U.S. incentivized the "suburbanization and depopulation of the cities" while allowing for access to cheap credit, all connected to the Interstate and shopping malls (Peterson, Personal Interview). Yet according to Danielle Dai, who researched the Chicago Transportation Authority (CTA)'s joint development practices:

> With more than two thirds of the American population living in urbanized areas, there is an increasing need for comprehensive, efficient, and high quality public transit to ensure the vitality of cities. Yet, the insufficient capacity of the government to meet the increasing demand for public transportation requires a critical look at alternative tools that support mass transit. One strategy is joint development. Joint development is a public-private partnership at, adjacent, or near a transit facility in which the private partner(s) help offset the costs of improving a transit facility with the recognition that improved facilities can enhance the surrounding area (Dai, 2011)

These problems are faced throughout the United States, and especially in New York. Nonetheless, the MTA has been working with the New York City Economic Development Corporation (EDC) and Department of City Planning (DCP), as well as with developers, in order to dispose of MTA property. However, it is an entirely different story in Hong Kong.

Hong Kong's MTR Corporation is a profitable transportation company, privatized with the government owning the majority of shares. By building offices, apartments, and stores directly above stations (see Figure 2.3), the MTR is able to use value capture mechanisms in order to actually be profitable (Loo, 2010). Due to Hong Kong's density, the percentage of residents who ride mass transportation is the highest in the world (Suzuki, 2013). This equitable, sustainable, and feasible efficiency (Zhao, 2011) is coupled by the fact that the government technically owns all land and leases it only for certain periods of time, it is relatively easy for the MTR to acquire parcels for transit-oriented joint development atop station entrances due to Chinese leasehold systems, and then sell or lease these properties to developers. Furthermore, unlike American public transportation authorities, the MTR is privatized and operates on commercial principles, whilst being controlled by the public vis-à-vis majority shareholdings by the local government. Public-private partnerships (P3s) require immense resources which are difficult to synergize (Enoch, 2002). Often, the public sector does not know how to regulate the private partner, and the private partner cannot think in political terms (Davis, 1986).

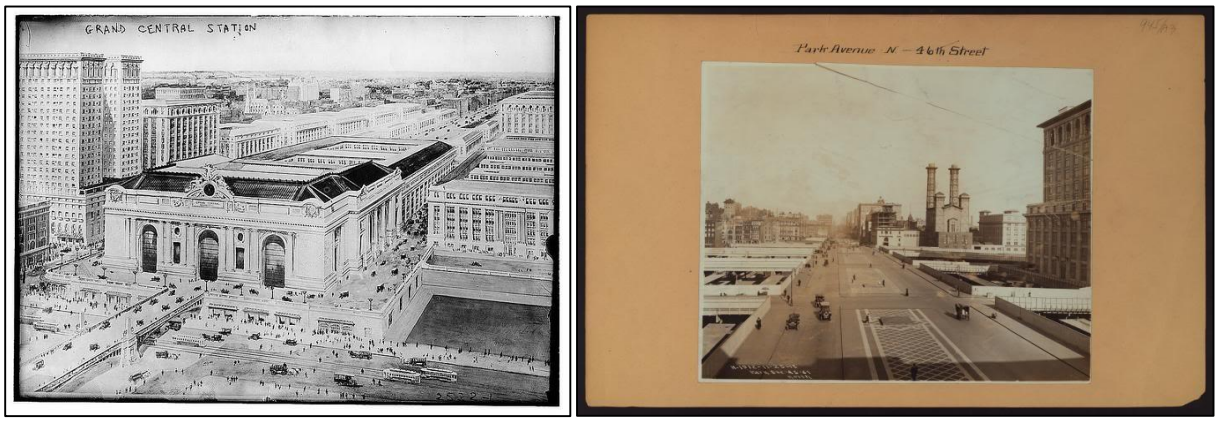
Figure 2.3: *Typical MTR Underground Shopping*

The Rail + Property (R+P) program has begun to design P3 pedestrian-friendly environments, increasing the value of property (see Figure 2.4). Indeed, "often missing was a high-quality pedestrian environment and a sense of place", and "most first-generation R+P projects featured indistinguishable apartment towers that funneled pedestrians onto busy streets

and left them to their own devices to find a subway entrance" (Suzuki 2013, 63). This program accounts for more than half of all income to the company, with an average of 35,000 additional passengers during the week at R+P stations, and housing prices increased by 5-30 percent (Cervero, 2009).

Figure 2.4: *Left: MTR Joint Development Construction in Kowloon, Hong Kong; Right: MTR Station & Mall Entrance in ICC Kowloon Master-Plan Community*

In the early 20th century, when railroads were privately-owned in the United States, they often followed similar financing strategies, with New York Central building an entire neighborhood above Grand Central Terminal's tracks known as Terminal City (see Figure 2.5). This neighborhood was developed atop rail yards, akin to contemporary projects at the Hudson Yards in Manhattan, Atlantic Yards in Brooklyn, and Sunnyside Yards in Queens.



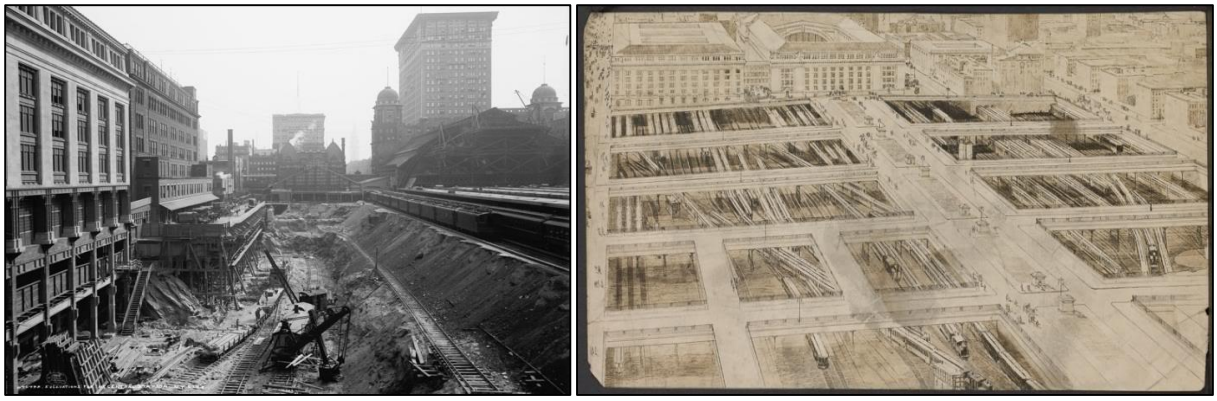


Figure 2.5: *Terminal City at Grand Central Terminal (Historical Photographs)*

Clearly, value capture and joint development are not new ideas. This method was applied in London when the Metropolitan Railway Company bought undeveloped parcels along its planned extensions (Enoch, 2002). Moreover, King's Cross Station, built in 1852, is the oldest surviving terminus in London. It stands essentially across from St. Pancras, which was built twenty years later from 1865 to 1876. King's Cross "was the largest railway station that had yet been built" (James 265, 2014) until George Gilbert Scott designed the Midland Grand Hotel and St. Pancras for the Midland Railway twenty years later (James 2014, 266). The "hotel's Gothic revival façade gives a decorous public face to the terminal behind", and "the combination of hotel and train station proved both convenient and profitable, but it required a very different architecture from that of King's Cross – one that promised both cultivation and comfort" (James 2014, 266). The real estate value of the site also allowed for the space beneath the station to be used as storage for beer. Joint development had created a destination onto itself. Recently renovated, St. Pancras is the terminal for Eurostar trains to the Continent.

St. Pancras was completed in 1876, and the following year, Victoria Terminal began construction in Bombay, India. Now known as Chhatrapati Shivaji Terminus, the station was designed by Frederick Stevens in order to maintain colonial authority. As such, it "lacked that building's commercial function" because "the colonial government's ability to override the

market forces that shaped nineteenth-century London enabled this to be an emphatically civic structure" (James 2014, 318). Yet many of Britain's terminals were destroyed.

In the 1960s, London's Euston Station was demolished in order for additional capacity to be added, and for the same reason, Paris' Gare Montparnasse was redeveloped. However, Gare Montparnasse was rebuilt with joint development practices, with office towers built above the terminal, while Euston Station did not include new towers. Railroad companies in Europe were not dealing with an Interstate Highway system, and they also tended to be nationalized, especially due to World War Two. American railroads, on the other hand, were privately-owned, and the purpose of hub demolition was to provide spare revenue for failing railroads, rather than to increase capacity and service.

In Germany, on the other hand, Berlin has rebuilt itself from World War II and the Cold War with new central stations in formerly-destroyed, dead-zone, ghost-station neighborhoods, topped by Deutsche Bahn (DB) office towers and tubes of light streaming into stations at Potsdamerplatz (see Figure 2.6). The DB is Germany's national railway, and it maintains a profit due to control of freight operations and real estate, as seen through its ample shopping opportunities at Hauptbahnhof, one of the central stations of Berlin. Unlike Penn Station, Hauptbahnhof has been redeveloped whilst retaining ample sunlight from glass roofs and ample room for movement between upper and lower platforms (see Figure 2.6).

Figure 2.6: *Potsdamerplatz (L); Hauptbahnhof (R), Berlin*

CHAPTER THREE: TRANSPORTING TRANSPORTATION JOINT DEVELOPMENT

3.1: NEW YORK CANNOT TRANSPORT HONG KONG'S MODEL

The MTA is actively working with the City of New York and developers in order to eventually transfer development rights (otherwise known as air rights) vis-à-vis a zoning lot merger at the Fulton Center (Paley, Personal Interview). The Department of City Planning works with the MTA and a developer in order to transfer air rights onto adjacent property, allowing for that property's floor-area-ratio (FAR) to be increased. But this is nothing compared to the practices in Hong Kong, where joint development and value capture allow for the MTR Corporation, a privatized company with a majority of shareholdings owned by the government, to be a profitable public transportation company. The MTA's former CEO, Jay Walder, left the MTA in order to work for the MTR. While no longer working in Hong Kong, Mr. Walder has stated that the MTR's Rail+Property Program may not be able to be 'transported' to New York due to higher operation and construction costs, as well as a lack of government-owned land.

In Hong Kong, the government is relatively centralized and land ownership laws are not as individually-oriented as in the United States. The city was a city-state, and there was only one level of government until 1997. Today's situation remains similar on most development matters, with the land ownership system being leasehold instead of freehold. Hong Kong's model also works because Hong Kong is one of the densest cities on the planet, and the MTR feeds people into its transit-oriented malls, apartments, and offices (see Figure 3.1). According to Dorothy Chan, a Senior MTR Manager, and Sai-Ping Chin, an AECOM Executive Director, the MTR's sustainable financial model integrates living, working, and playing into interconnected T.O.D. neighborhoods. The MTR typically owns property below ground, including countless retail outlets, and it will work with developers to sell, lease, or manage property atop its stations,

including the tallest buildings of Hong Kong: International Finance Centre (IFC) and International Commerce Centre (ICC).

Figure 3.1: *Tsing Yi Station: Apartments Atop Station (L); Maritime Square Mall (R)*

Unlike the MTA, Hong Kong's MTR Corporation is privatized and operated as a for-profit company with majority shareholdings by the government as a hybrid structure of corporate ownership. This structure allows for more independence, yet at the same time, it is the relatively rigid state-control in China that allows for the MTR's value capture and joint development. According to Jason Fane, a prominent real estate developer in Manhattan, Ithaca, and Toronto, "there are fewer planning obstacles in Hong Kong and certainly in the other Chinese cities" because "most of these places are less tolerant of the lone holdout" (Fane, Personal Interview). The MTR develops commercial and residential properties atop its stations, which may not be possible in New York due to legal obstacles. In Hong Kong, the sheer level of density coupled with an unfriendly environment for automobiles, alongside multiple entrances to subway concourses, allows for high profit margins on MTR property (see Figure 3.2). The MTR, after all, is an independent corporation, and not a public authority, so while the government serves as majority shareholder, the MTR "has the freedom to develop real estate, to hire and fire who it will, and to take business-minded decisions—whereas other transit systems, including the one in New York, must deal with union contracts and legal restrictions" (Padukone, 2013).

> Many extensive rail and bus transit systems in Hong Kong and Japan operate successfully under private ownership. Population densities are extremely high in Hong Kong and Japanese cities such as Tokyo and Osaka. Use of automobiles in these cities is not only limited by space, but it is more expensive than in the U.S. and most European cities. Car travel is less subsidized by direct and indirect measures, such as tax exemptions for many trip categories, company car ownership, cheap or free parking. Land uses, including major activity centers, are planned with rail transit lines and located around their stations. In Japan, many regional rail companies own housing complexes, department stores, shopping centers, amusement parks, and other commercial developments whose income is used for partial support of transit operations. Although privately owned, many transit companies have various arrangements for cooperation, financial support or guarantees by the government. (Vuchic 2005, 435)

Figure 3.2: *MTR Integrated Development Plans (Chan, 2015)*

The general MTR strategy would be difficult to achieve today in the United States or Britain, because the government does not own land to lease to private developers. Indeed, "if Britain's rather fragile means of ensuring that local authorities account for their decisions works, it is because of the distance that exists between local authorities and central government, and the de facto independence that inspectors are bale to establish from both" and "Hong Kong has had

difficulty in trying to model a system of appeals on British administrative practice because there is no such separation" (Booth 1996, 140). Even land that is already owned by public authorities has often not been developed in a similar fashion in the U.S., largely due to bloated bureaucratic regulations, which discourage cooperation with the private sector. The fare box recovery ratio of 186 percent in Hong Kong covers the cost of electricity, maintenance, and salaries, whilst fares in New York covered only 57 percent of operating expenses in 2012 (Smith, 2013). New York City Transit's equitable flat fare is also not efficient, charging the same regardless of distance, which is not going to be profitable (Guess, 2008), especially because land near subway routes has already been developed and is largely owned privately, and rail yards are difficult to develop. Moreover, due to high labor costs and excessive regulations, construction in New York City is atmospherically more expensive than in Hong Kong (Smith, 2013).

Yet in the late 19th century, when transportation systems were privately owned and operated, joint development projects were commonplace. The private sector involvement in infrastructure investment in the 19th century overshadowed all other economic developments of the period (Grimsey, 2004). Once public agencies became owners, it became difficult to coalesce opportunities; numerous regulations made it mutually disadvantageous (Keefer 1985, 334).

3.2: JOINT DEVELOPMENT ACROSS THE UNITED STATES

New York's joint development concerns are shared by other American cities, which are also exploring real estate opportunities. According to the Wall Street Journal, the "nation's transit agencies, long tasked with helping people get around, are putting more effort into giving them a place to live, work and play" (Dulaney, 2014). Phoenix and Salt Lake City have been developing light rail, even though they are 'red' states, because voters understand the benefits to businesses and to traffic alleviation (Dovey, 2014). Atlanta's MARTA will be developing 1,400 residential units on parking lots and 50,000 square feet of retail space on property near a dozen of its 38 stations (Dulaney, 2014). MARTA's incentive to develop its property stems partly from a lack of state financing, forcing it to find creative sources of revenue (Ditmar and Ohland, 2004). With young professionals preferring life in the city, MARTA has fought hard against federal regulations and local zoning ordinances in order to develop its property for non-transit purposes (Ditmar and Ohland, 2004). Unlike Miami-Dade County, Florida, which has created a Rapid Transit Zone in order to standardize zoning atop the Miami Metrorail's assets, Atlanta is balkanized in typical U.S. fashion; Americana fears centralized government (Mathur, 2014). Yet unlike NYCT, MARTA operates in a sprawled city, and owns plenty of parking lots near the CBD which are being slowly redeveloped into transit-oriented neighborhoods.

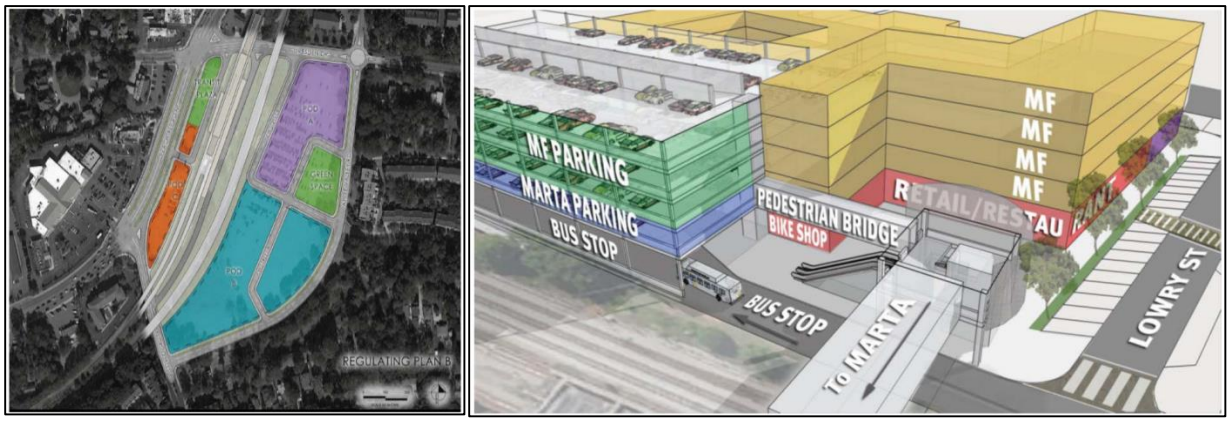


Figure 3.3: *MARTA Joint Development Projects (Courtesy of MARTA and FTA)*

Miami is also a sprawled city, of course, but the government has taken steps towards streamlining joint development. All Aboard Florida (AAF), America's first privately financed railroad in decades, is moving full steam ahead after tackling legislative hurdles in the state and federal government (Jaffe, 2015). AAF is planning on operating a profitable railroad by 2017 between Miami and Orlando, and the Federal Railroad Administration (FTA) has just completed its final environmental impact statement report in August 2015 so that AAF can seek federally-backed loans via the Railroad Rehabilitation and Improvement Financing program. The railroad also "won approval from a state finance commission to sell $1.75 billion in tax-exempt bonds despite intense opposition from local counties concerned about noise and other hazards" (Jaffe, 2015). However, many are concerned that AAF will not be profitable, and will need to be maintained by taxpayers or subsumed under Amtrak. Amtrak's Northeast Regional and Acela routes have an operational surplus, but maintenance of way eats up that revenue. However, AAF will have "only four stops and link just two metro areas with a total of 9.4 million people; the dense Northeast Corridor has 30 stops and links four major metros with 48 million residents", and "neither Orlando nor Miami has a strong public transit network linking AAF stations to destinations—a particular problem at the Orlando station, which will be located at the airport instead of downtown" (Jaffe, 2015). This sprawl translates to a lack of job accessibility, and since rail is fueled by high ridership, a lack of density means a lack of profit.

Yet unlike Amtrak, AAF plans to develop 4.2 million square feet of real estate (Grabar, 2014). The coastline from Orlando to Florida contains half of Florida's population, most of a former railroad's right-of-way, and tens of millions of travelers on business and vacation. Indeed, Orlando is the most visited city in the United States, and AAF states that there are 500 million trips made every year between its destination cities (Grabar, 2014). The

relatively dense Atlantic coast of Florida is no accident; Henry Flagler, founder of AAF's predecessor, Florida East Coast Railway, arguably built Miami. Akin to countless other American cities from Dallas to Atlanta, Miami began as a railroad transportation hub. Flagler built real estate in Miami, attracting crowds just as AAF will be doing in their "colossal station complex designed by Skidmore, Owings and Merrill that includes a half-dozen towers, over a million square feet of office space, 1,111 residential units, a hotel, car rental outlets, parking, and blocks of ground-floor retail facing the street" (Grabar, 2014). As elucidated by the Urban Land Institute, this is not a new policy, but it has not been practiced for decades due to various factors, from antiquated zoning laws, onerous financial regulations, and a lack of communication between municipalities and developers, to NIMBYism, a fear of density, and a lack of a profit motive (Krieger, 2011). AAF, as a private operator and developer, has the incentive to tackle government rules and regulations, which hamper TOD across the United States. Indeed, according to Robert Paley, MTA Director of TOD:

> Federal policies and incentives can have a powerful trickle down effect on TOD, having the ability to influence a broad spectrum of municipalities to move towards broad TOD goals. The need for greater regional or federal coordination however, means that each locality usually follows its own agenda to promote or (as is often the case) paralyze TOD projects within districts. (Krieger, 2011)

Figure 3.4: *Rendering of All Aboard Florida's Miami Station (Courtesy of All Aboard Florida)*

Meanwhile, in Washington D.C., the Washington Metropolitan Area Transit Authority (WMATA), which has "one of the oldest and most established" real estate teams, "sells and leases excess land around its 91 stations" (Dulaney, 2014). The revenue from these leases is transferred into a unique fund used to invest in infrastructure renewal and station accessibility, and 32 leases thus far have brought in more than $140 million since 1997. Because WMATA is not controlled by a single state, funding is especially unstable, forcing the agency to adapt creative financing measures such as real estate development. As Jaime Lerner, the mayor of Curitiba, Brazil, who invented bus rapid transit stated, creativity starts when a zero is slashed from a budget. With plans for joint development atop D.C.'s Union Station tracks, known as Burnham Place, D.C. has its fair share of joint development ahead (Meyer, 2015).

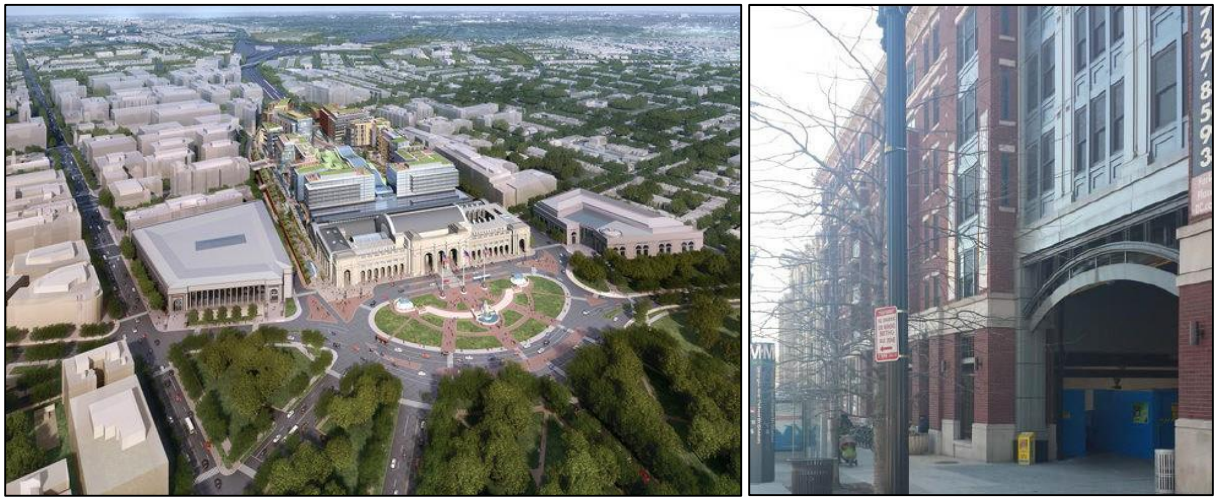


Figure 3.5: *Left: Burnham Place (Akridge and Shalom Baranes Associates, 2015)*
Right: Joint Development at WMATA Georgia Avenue and Petworth Station, D.C.

In Los Angeles, the Metro has 80 stations, 47 of which have had land leased for development since 1999 (Dulaney, 2014). The Los Angeles County Metropolitan Transportation Authority has received $20 million a year from leasing properties, including Southern California's transportation hub: Union Station. Yet this historical terminal's improved public spaces and new restaurants are only part of Metro's developments; in fact, Metro is one of the

largest “public real-estate developers in L.A. County, with thousands of residential units – many designated as affordable – on properties the agency owns and leases to developers” (Dulaney, 2014). For instance, on Hollywood Boulevard, luxury condominiums and a W Hotel above a Metro station provide $750,000 annually due to the prime T.O.D. location (see Figure 3.6).

Figure 3.6: *Los Angeles Union Station Retail (L); W Hotel at Hollywood Station (R)*

According to Jenna Hornstock, Deputy Executive Director at Countywide Planning at Los Angeles County Metro, the challenges facing Metro are similar to challenges facing the MTA. Neither are developing sites themselves, but of the property owned by Metro, only a sample are interesting to developers, and only a sample get past NIMBYism and complex engineering costs (Hornstock, Personal Interview). Moreover, the joint development program is not a major revenue generator even when the market is good, and while it covers staff costs, the County Metro also works for a county with varying degrees of density and lifestyles. As such, Metro provides grants to local cities and unincorporated areas in order to remove regulatory barriers to T.O.D (Dulaney, 2015). In essence, according to Dulaney in the Wall Street Journal:

> For decades, city and county transit agencies have leased out kiosks or small storefronts in their rail stations to businesses such as newspaper stands and coffee shops. Now, agencies are far more ambitious, developing large-scale, rent-producing developments, including hotels, apartment buildings and shopping malls, around their rail hubs. Transit officials expect real estate to become an increasingly important revenue source, amid stagnant federal funding and rising costs of

> upkeep for aging systems. According to APTA data, public transit ridership grew 13% in the U.S. from 2000 to 2013, with commuter-rail ridership climbing 62% in the period. But riders' fares don't nearly cover agencies' operating costs, at a time when their worker-related expenses such as health-care and pension costs are also rising. New York's Metropolitan Transportation Authority, the nation's largest transit agency, expects to pay out about $1.3 billion in pension costs this year, compared with $480 million a decade earlier (Dulaney, 2014)

In Massachusetts, similar joint development projects are also being proposed. The Massachusetts Bay Transportation Authority (MBTA) may not be the largest land owner in Massachusetts, but it is the second largest, leasing some of its most valuable properties to developers for transit-oriented development (Monty, 2014). These developments have increased ridership, created pedestrian-friendly environments, and provided the indebted MBTA with needed capital investment. Unfortunately, these efforts have not yet been capitalized upon at Somerville's Davis Square, where the MBTA operates two Red Line entrances. These are stubs surrounded by buildings with multiple stories of ground-floor retail and offices, and the MBTA could easily redevelop these parcels in order to increase their revenue, and attract more ridership. Moreover, the Green Line Extension into Somerville will temporarily terminate at Tufts University, which is building an Air Rights Building atop the station. This building will be paid for and constructed by Tufts, and the University will also maintain the surrounding plaza.

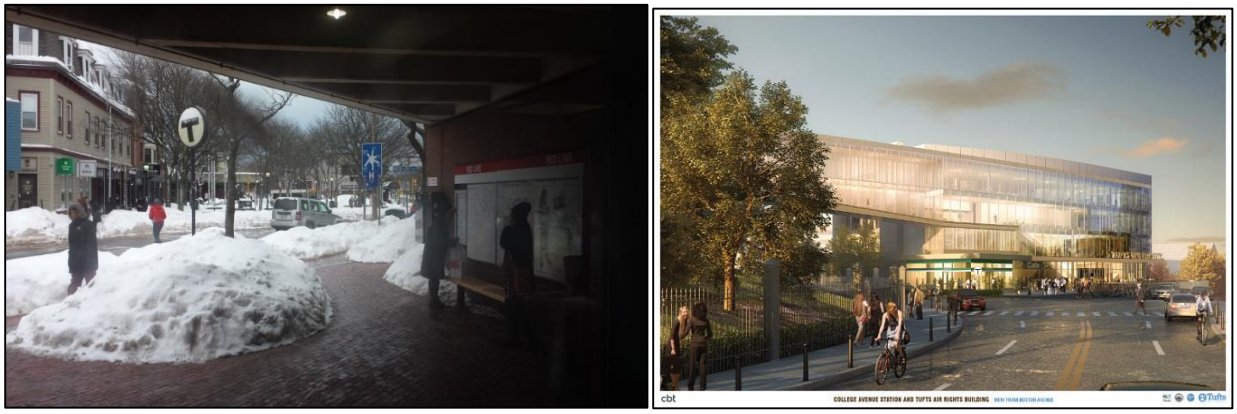


Figure 3.7: *Davis Square Stub Entrances; Green Line Station at Tufts (CBT, 2014)*

Indeed, Tufts presses forward on quite a few initiatives, including the 100,000 square foot Air Rights Building, slated for completion in 2020. According to Tufts University:

> The new building is part of a public-private collaboration among the City of Medford, MBTA, Tufts and Cummings Foundation. Through the partnership, the MBTA and Tufts have signed an agreement that grants Tufts a 99-year lease of air rights over the College Avenue Station and commits Tufts to pay for associated project redesign and construction changes. Tufts will also pay for ongoing maintenance and security around the station, which will amount to significant ongoing savings to the MBTA. Tufts will be granting use of its land to the MBTA for the construction of the new station at no cost to the MBTA. Tufts has committed to pay $550,000 over four years to the City of Medford to support improvements throughout the city. In addition, in lieu of property taxes, Tufts has pledged to pay the city $250,000 in the year that it receives a final certificate of occupancy for the Tufts building. At the start of the second year of occupancy, Tufts and the City will negotiate in good faith on an extension of the PILOT agreement, with the understanding that future payments be not less than the year one payment. (Howard, 2015)

Yet Tufts University is no stranger to air rights, having created the Tufts Development Corporation in the 1980s in order to explore buying South Station air rights for its Chinatown campus. However, it sold the air-rights to Hines Development Corporation because the vibrations from the train traffic made the site unsuitable for high-tech firms, which is what Tufts had intended for the area (Fowler, 2003). Today, besides for the Bus Terminal, which could be built without building ventilation from the diesel trains below because it did not encompass the entire yard, there is ample room for development.

Boston's South Station used to have plenty of commercial space, but most of it has been destroyed. North Station and South Station do not connect, and neither do the MBTA's Red and Blue Lines. The 2024 Olympics proposal may provide an incentive for the state to fund transit improvements, even if most proposals are never built, as has been the case with Big Dig mitigation efforts. But the Boston Redevelopment Authority (BRA) and MassDOT have been working on the South Station Expansion Project, a public-private partnership that would remove

a “major corridor chokepoint and unlock greater growth for both intercity and commuter rail” (Fichter, 2013). The expansion plan would allow for properly-ventilated joint development atop the MBTA-owned station platforms and on adjacent properties, while expanding the number of platforms in order to increase capacity, connectivity, and growth (see Figure 3.2B). The purchase of the adjacent US Postal Service facility, alongside “new station platforms, tracks, waiting areas, streetscape, interlockings, station systems” and “improved connectivity within and around the station and between the station and its surrounding neighborhoods” would undoubtedly enhance the MBTA’s asset portfolio (Fichter, 2013). South Station, which originally had 23 tracks and now has 13, was once twice as busy as Grand Central Terminal, but it only avoided demolition by being sold to the MBTA in 1978. The MBTA renovated the station and built a bus terminal in the 1990s, but today’s proposals would provide more real estate revenue.

Figure 3.8: *South Station (L); Tomorrow’s South Station (R) (Fichter, 2013)*

In the end, transportation cannot be ‘transported’; context is extremely important. Transportation infrastructure is planned in accordance with many powers, identities, and ideologies. Various man-made and natural social, economic, political, and environmental factors not only contribute to how infrastructure is designed, but also to how it can be positively enhanced (Walker, 2011). Transportation agencies are different.

CHAPTER FOUR: LIMITS OF REVENUE-GENERATION ON MTA PROPERTIES

4.1: FINANCING THE METROPOLITAN TRANSPORTATION AUTHORITY

As a New York State public authority, the MTA is meant to be independent of the whims of politicians and their budgeting schemes. It is financially boosted by its revenue-positive bridges, tunnels, and parking facilities, which were built by Robert Moses' Triborough Bridge and Tunnel Authority, and merged into MTA Bridges and Tunnels in order to help fund subway operations. Yet many bridges owned by the City of New York and not by the MTA or Port Authority do not charge tolls, even though these bridges cross the East River into Manhattan. Plans for congestion pricing could allow for an additional transfer of funds to the MTA.

The MTA remains indebted, raising fares and cutting services. While in 2010, MTA Chairman Jay Walder found $60 million in annual savings "by instituting tighter overtime controls" and $40 million in savings by "renegotiating contracts with vendors", this was less than 1 percent of the MTA's budget, which had been cut by $143 million by New York State in 2010 (MTA Transportation, 2015). Regularly audited by state and city comptrollers, the MTA's dedicated transit funds have been regularly diverted by the state (MTA Transportation, 2015). According to Governor Cuomo, "the City has been paying about $100 million per year for probably about the last thirty years into the capital funding", and the City recently "upped that to $125 million" (MTA Press Release, 2015). The City has historically been broke, so the State has had to bail out the city and pay for the subways, but this is no longer the case. Either way, funding battles have been a constant for the MTA. While some real estate related taxes get siphoned into the MTA, these funds depend on the state of the economy and are relatively unstable. Traffic congestion pricing, higher gas taxes and payroll taxes, and more money from

the federal government, are integral solutions for the region's future success. As it stands, the MTA cannot remain fiscally sound without outside support.

The MTA Board of Directors, appointed by the Governor of New York, Mayor of New York City, and various county executives, cannot advocate for reform without the support of their elected leaders. For now, the MTA depends upon taxes which highly fluctuate with the economy, and the MTA needs significant funding for its Capital Plan. According to Jason Fane, a prominent real estate developer, New York City collects "considerable value capture from increased real estate value or development in the form of property taxes, water sales, miscellaneous fines, permit and development fees, sales taxes" and such, but the government chooses not to give that additional revenue back to the MTA (Fane, Personal Interview).

The city has been re-zoning locations near subway entrances for transit-oriented development, including ground-floor retail, mixed-income housing, and offices. Developers are able to build higher and increase their floor-area-ratio (FAR) if they maintain or renovate station entrances, but this is not a streamlined process (see Figure 4.1A). If new incentives were to be formalized, including FAR bonuses for contributing to the renovation of a nearby station, then the MTA could be provided with a relatively stable source of income. American examples of value capture will help to catalyze the growth of this fiscally responsible practice in the U.S. In order for a potential value capture mechanism to be established, city officials will need to prove that the accessibility provided by the subway is enhancing land values, and that this value should be returned to the MTA, so that they can continue to maintain and expand the network. Seeing as land values are increased around subway routes, it will be important to define a physical value capture zone in commercial districts 'accessible' by subway. Pedestrian-friendly neighborhoods have typically been defined by half-mile or quarter-mile distances from public

transit and this will be a quarter-mile for this study, in order to strengthen the value capture potential of the commercial land use in the district (Woodsong, 2005). These two factors – distance and land use – are based upon GIS literature previously published (Meyers, 2012).

Figure 4.1A: *Entrance Renovation by Real Estate Developer in Brooklyn, NY (L); Right: Subway Entrance in Building, Manhattan, NY*

4.2: THE MTA'S VALUE CAPTURE AND JOINT DEVELOPMENT LIMITED ASSETS

While often perceived to be unable to capitalize upon existing assets, the MTA actually has few assets that can be transformed into transit-oriented hubs of commercial revenue (see Figure 4.2A). This is quite common in many cities. The few exceptions are not enough to allow for self-sufficiency, but they are definitely a boon (Donovan, Personal Interview). Examples include Grand Central Terminal and the Fulton Center, with additional T.O.D. at concourses and passageways such as the Gimbels Passageway in Midtown planned as public-private partnerships for the near future (Tauranac, Personal Interview). Atlantic Yards in Brooklyn and Hudson Yards in Midtown Manhattan are also examples of T.O.D., as the MTA has sold air rights to private developers. In fact, the 7 Line Extension to the Hudson Yards has been funded entirely by 28 million square feet of value capture in Manhattan's newest neighborhood (Rubinstein, 2014). This project did not require any funds from New York State in order to complete, which is good due to Governor Cuomo's arguably dispassionate stance on public transportation. Chairman Prendergast states:

> I do believe it's important that we get a menu of different funding sources up there that are sustainable. Sustainable in terms of the revenue they bring, and sustainable in terms of their long-term. In the sine-wave cycle that some of these revenue sources have, you hopefully have ones that are in a peak while others are in a valley. Value capture on real estate… the idea of Seven West funding, where New York City is giving us [money] to fund the 7 Line is an example of that. There are cases… where someone bought a piece of property directly adjacent to the… Second Avenue Subway, and they're selling that property at increased value... It's reasonable to expect that some of those profits should be shared by the people who actually made the improvements to the infrastructure and replow those revenues to further increases in the infrastructure network. The other one is cap and trade. (MTA CEO Tom Prendergast, Courtesy of Sam Schwartz)

Figure 4.2A: *Top: Leases on MTA Station Property in Queens (L) and Retail in Manhattan (R)*

The MTA has used eminent domain to develop parcels along Second Avenue, but not for value capture or joint development; rather, the public authority is building state-of-the-art ventilation systems (Ryley, 2009). Unlike older subway routes in the city, which use sidewalk grates – no longer permissible by building codes – the new stations will be chilled by permanent utility structures situated "at each end of the stations, many as large as midsize apartment buildings, rising up to nine stories tall" (Ryley, 2009). According to the MTA Real Estate Department, air rights can be transferred from these properties, but even still, "elected officials, apartment owners and architects who have seen renderings of these hulking mechanical cabinets argue that they will blight the residential avenue, depressing property values in their immediate vicinity" (Ryley, 2009). Moreover, "thirteen properties have been seized via eminent domain to

make way for them, while 75 residents and business owners face eviction at an estimated cost of $10 million" while "dozens of co-op owners could forever be left with bricked-up windows or blocked sunlight" (Ryley, 2009). Yet the MTA has been responsive, designing for small-footprint retail in the structures. Nevertheless, NIMBYism has resulted in missed opportunities. The MTA disposes instead of developing property and leasing it to developers (see Figure 4.3A).

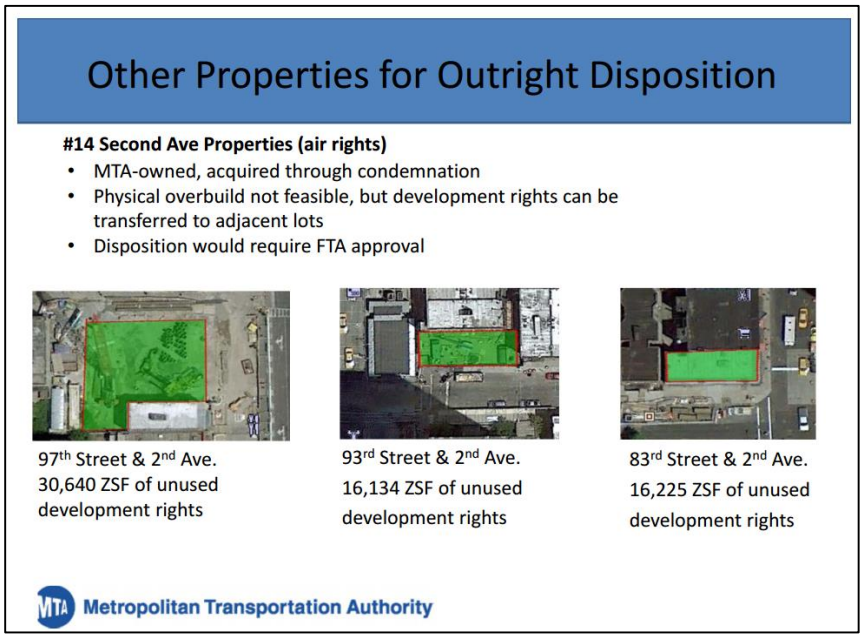


Figure 4.3A: *Second Avenue Subway Ventilation Structures (MTA, 2014)*

Meanwhile, the MTA is considering an agreement to "create the first Metro-North-initiated transit-oriented development in its system", resulting in 143 apartments, 27,000 square feet of retail space, and two pedestrian plazas in Harrison, New York. The parking lot "would be replaced by a series of pedestrian-oriented, four-story buildings lined with retail stores in the ground floor and apartments on the upper floors" (Bernick, 1997). The Joint Development Agreement would allow for the Town and Village of Harrison, the MTA, and the developer to go through a public review process, land review process, and rezoning proceedings. According to Michael Bernick in *Transit Villages in the 21st Century*:

> The township of Harrison lies 22 miles, or around 40 minutes, from Grand Central Station. The town's traditional main stead, Halstead Avenue, is only a short walking distance to the station. Parking lots and open tracts separate the train station from the main street. In the late 1980s, township and Metro-North officials concluded that placing housing on the surface parking lot would help revive the local economy and reinvigorate main street. (Bernick 273, 1997)

Moreover, of the 4,716 MTA properties examined, 3,944 were immediately excluded because they were not buildings, depots, fan plants, garages, offices, parking, shops, abandoned stations, substations, warehouses, and yards. While nearly all "MTA-controlled properties are in active use for transportation-related functions and therefore not available for outright disposition", and while "overbuilds, though sometimes feasible, are complex and costly", the MTA has identified 15 properties for outright disposition, in addition to their Madison Headquarters, and 5 overbuild projects in addition to the West Side Yards and Atlantic Yards. Even with these surplus properties, joint governmental initiative is required to dispose of them, with as-of-right zoning considerations being a primary limitation. Many of the sites available for disposition are wedges on undesirable properties, and the complicated geometries of the parcels make development difficult. Furthermore, disposition as a term is quite negative, reflecting the disposition mentality of the MTA, and the inability of the agency to press for more revenue (Muslouglu, 2015). After all, the MTA, whilst supposedly an independent public authority of the State of New York, is actually governed by a Board of Directors largely appointed by the Governor, often pressured by powerful developers to move the process along (Muslouglu, 2015). The agency does not have the expertise required to be a property developer, and unlike the MTR, the MTA does not consider itself to be in the real estate business (see Figure 4.4A).

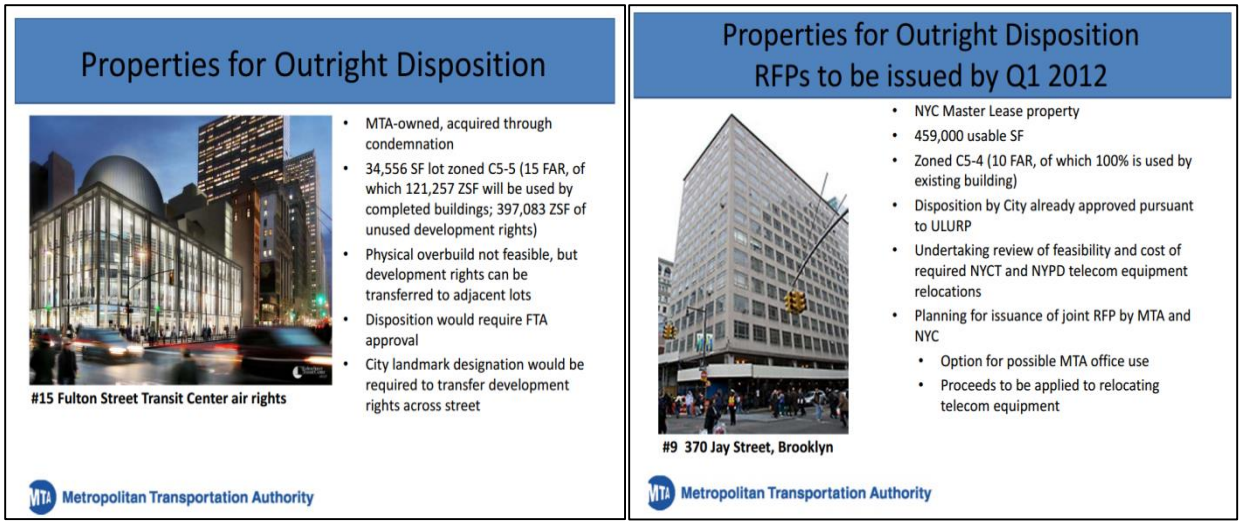


Figure 4.4A: *MTA Properties for Disposition (MTA, 2014)*

The MTA owns and operates many rail yards, but most of them are in far-flung locations. According to Robert Paley, Director of Transit-Oriented Development at the MTA Real Estate Department, developing atop of them would require interrupting service because the tracks, unlike at the Hudson Yards in Midtown Manhattan, were not designed with adequate space for future support infrastructure (Paley, Personal Interview). The Hudson Yards (officially the Sen. John D. Caemmerer West Side Yards) were reconfigured in the 1980s for the MTA from a freight yard for the railroad that was operating the tracks that became today's High Line Park. The MTA's other yards, which are not in prime locations, were not designed for future joint development, so implementing a project on these properties would be too expensive. Work would need to be completed during the night (requiring exponentially increased salaries), service would need to be disrupted, and countless engineering challenges – ranging from track ventilation to fire insulation – would need to be addressed. These various decking costs make most overbuild projects financially unfeasible, especially because most of the MTA's yards are not located in prime real estate territory, and they are also not zoned for high density uses, let alone commercial and residential uses. If the MTA were to solely break even, maintenance costs

would still be higher for the MTA due to lighting and other equipment that would not have been necessary without an overbuild, so profiting is absolutely necessary.

Due to these costs, most development occurs atop rail yards after the yards have been demolished or replaced entirely. (Paley, Personal Interview). Brooklyn's Atlantic Yards were moved and the Upper West Side's Penn Yards were scrapped for Donald Trump's Riverside South (see Figure 4.5A). The success of value capture at the Hudson Yards (see Figure 4.5A) will be difficult to replicate elsewhere due to the MTA's limited assets, and due to the difficulty in measuring increased value due to transportation. After all, the Hudson Yards was not built upon, so the increased value from the decking process is relatively easy to measure, compared to the impact on existing buildings from new subway routes, as would be the case along Second Avenue Subway route in Manhattan.

Figure 4.5A: *Left: Rendering of Hudson Yards, NYC (Tishman Speyer Properties, 2014) Right: Penn Yards Cleared for Trump's Riverside South (James, 2014)*

Even though the Second Avenue Subway will increase property values, and the MTA is working with the City of New York to explore value capture mechanisms, the scale will be nothing compared to the construction of Manhattan's newest neighborhood on the West Side, or the Atlantic Yards in Brooklyn. Prior to the Atlantic Yards was Atlantic Center, which sits adjacent to the current project and to Atlantic Terminal, New York's third largest rail terminal. According to Perry Davis of *Public-Private Partnerships: Improving Urban Life*:

> Breaking ground for Atlantic Center [in the 1990s] in downtown Brooklyn signals the physical start of one of New York City's most ambitious construction projects. Costing approximately $500 million, the mixed-use development will eventually comprise up to 3 million square feet of commercial space clustered in four office towers, over 100,000 square feet of ground-level retail establishments, 643 moderately-income, owner-occupied residential townhouse units, and a new public park. The project will be located on more than twenty-four acres of land. The groundbreaking signals an even more historic event – the renaissance of downtown Brooklyn and the physical extension of the country's largest business district, Manhattan, across the East River and into the city's boroughs. (Davis 1986, 87).

Similarly, no other MTA asset will reach the grandeur of Grand Central Terminal. The Beaux-Arts terminal, which only earned the MTA $7 million prior to a 1994 renovation, earned the MTA $27 million in 2011 (Agovino, 2012). Indeed, Jeff Rosen, MTA Director of Real Estate, writes that "as the MTA strives to make every dollar count, we are looking to achieve the maximum economic return we can from each property that we control" and that "the success we've had at Grand Central mirrors our efforts elsewhere, and shows the way forward for all our properties, large and small" (MTA). Meanwhile, former MTA Chairman Joseph J. Lhota stated, "Grand Central will always be the greatest train station in the United States and the crown jewel of the MTA's transportation network", as it is a "focal point for the economic and social life of the region and a superb setting for the daily business of moving people" as the second most-visited place in New York City with 750,000 visitors a day (Agovino). Forty five retail leases in Grand Central Terminal have expired in the five years prior to 2012, but new bids have always been above the rent of the previous tenant. According to *Crains New York Business*, due to the Apple Store's opening at Grand Central Terminal, sales have risen 6.5% at other nearby shops in GCT that share revenues with the MTA. Furthermore, the MTA is collecting four times as much rent as before, and every 1% gain brings in $500,000 for transit service. This additional real estate revenue will be used towards funding for the Second Avenue Subway, East Side Access,

and the Fulton Center, among other projects in the 2015-2019 Capital Plan. East Side Access will bring Long Island Rail Road trains into Grand Central Terminal, and an entirely new terminal is being constructed below the current Metro-North terminal.

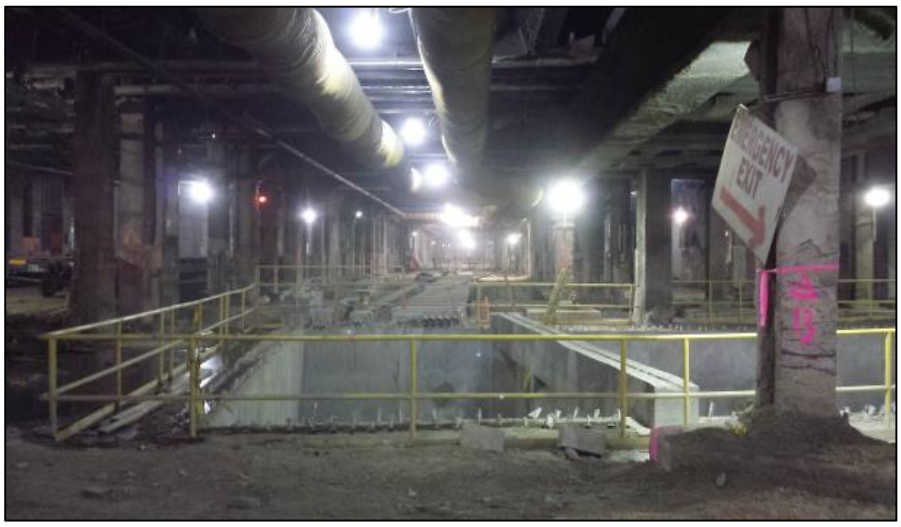


Figure 4.6A: *Future Retail Corridor at East Side Access Terminal in Grand Central*

Moreover, according to Robert Paley, Director of the T.O.D. Group at the MTA Real Estate Department, the MTA will eventually buy GCT from Andrew Penson, the current owner, once his air rights have been sold as part of the East Midtown Rezoning. Andrew Penson, owner of Grand Central Terminal vis-à-vis Midtown Trackage LLC, which also owns additional track property in the city and surrounding suburbs, does not want any development nearby occurring without the usage of his air rights. Meanwhile, SL Green, another developer, has proposed to develop a skyscraper, One Vanderbilt, across the street from Grand Central. SL Green would be able to build higher than allowed by zoning through contributions to MTA improvements. The Subway Improvement Bonus, introduced three decades ago when "the City instituted a floor area incentive in the Special Midtown District to encourage developers of sites in the central business district to undertake improvements to adjacent subway stations" (Hsu-Chen), has since expanded throughout the city. According to Edith Hsu-Chen, Director of Manhattan Office of the

Department of City Planning, ten development projects have earned bonuses thus far through special permit or as-of-right processes, and One Vanderbilt's additional FAR would be allowed through this process. SL Green has committed to $210 million in Grand Central improvements, including various passenger flow initiatives at street level and below ground for Metro-North, Long Island Rail Road, and New York City Transit. These pedestrian plazas would be centers of retail while also decreasing passenger congestion in East Midtown (see Figure 4.7A).

Figure 4.7A: *SL Green's Proposed Improvements for One Vanderbilt (MTA, 2014)*

The MTA does have spaces within some of its station concourses and abandoned passageways for retail. The most prominent example of the MTA's joint development practices is the Fulton Center, which opened in 2014 in Lower Manhattan, across the street from architect Santiago Calatrava's World Trade Center PATH Hub. These two hubs will be interconnected by underground passageways lacking retail, but the hubs themselves contain shopping opportunities. The West Concourse of the World Trade Center has 440,000 square feet of retail space maintained by an Australian developer, Westfield (Edelson, 2013). The center is expected to generate one billion dollars in retail sales, servicing workers, tourists, residents, and shoppers (Edelson, 2013). Meanwhile, Westfield will be maintaining retail properties at the $1.4 billion Fulton Center, which rises only four stories so as to allow for ample light to stream through the roof. Designed by ARUP with design development by Grimshaw, and containing a light

enhancing sculpture by James Carpenter, the center has done an excellent job at interconnecting formerly competing subway operators' stations into one complex, but only an insignificant number of stores will be managed by a private operator (Burton). The MTA brought ample light but not ample revenue. While air rights will eventually be transferred, if this was taking place in Hong Kong, the MTR would likely have developed the site itself or leased land out to private developers, seizing more revenue for its own operations. Today, the Fulton Center's retail remains vacant even though it has been one year since the center has been opened; this is an example of the MTA's lack of incentives as a bureaucratic entity (see Figure 4.8A).

Figure 4.8A: *MTA Fulton Center, New York City*

Daniel Peterson, who worked as a transportation engineer for Arup, states:

> In my role as Senior Transportation Engineer for Arup, I developed the plan for the station in a sketch I worked up on my train home… This original plan was modified by MTA's decision to retain the Corbin Building, but only by being made smaller. The circular elements (the promenade ground floor and depressed 'pod'), and the angled main staircases were retained… Grand Central Terminal and its east and west staircases influenced my thinking regarding the FSTC design, including its vertical space and clearstory daylight above, and the actions of 'descending into', and 'watching others'… There very much was an intent on MTA's part (from Peter Kalikow, MTA Chairman at the time, and who interestingly owned the Telegraph Building, the 1923 HQ for AT&T, across Broadway) to bring natural light all the way into Fulton Center, down to the A mezzanine if possible. There was on my part also a very intentional user experience of moving into, emerging into the light as one left the station and went to one's day in

the city. It is my sincere hope that users will enjoy a transformative experience as they leave and enter what is now called Fulton Center, an experience that keeps working for them, day after day; that fills them with a little bit of the energy and wonder of the city (Peterson, Personal Interview)

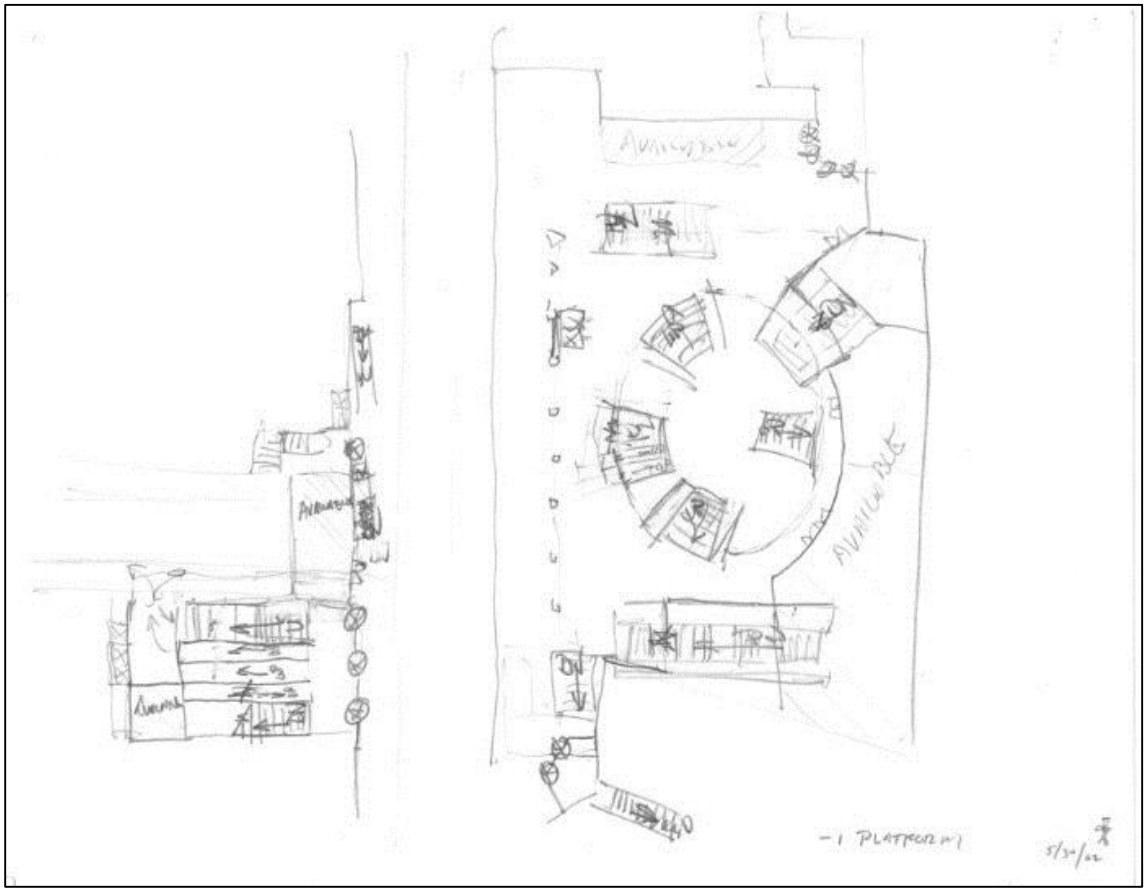


Figure 4.9A: *Fulton Center Preliminary Sketch, Courtesy of Daniel Peterson, PE*

The Fulton Center brings light into the subway through its glass roof, unlike Penn Station, yet it does not combine joint development with light. At the time the proposals were getting underway, the World Trade Center had just been attacked, debris will still being hauled out of Ground Zero, and the real estate market in Lower Manhattan was plummeting; even today, the rebuilt World Trade Center remains largely vacant. While the underground retail at the World Trade Center "had been one of the highest profit per square foot revenue generating properties anywhere" (Peterson, Personal Interview), no one knew that Lower Manhattan's real estate market would bounce back, let alone survive with a semblance of profitability at all.

According to Daniel Peterson, the MTA intentionally wanted to build a "civic" structure, which was a "project given" from the start, resulting in a humble structure. Designs were put forward that "lost the light" and "lost the circularity", and "they spent years on this problem moving from the design side to the valuation of the rights and working those into a deal that made sense for everybody" (Peterson, Personal Interview). Mr. Peterson states that "important transit stations have a tradition of open space and striking light", and that "commercial exploitation… has given us the numbing warren… that is today's expression of Penn Station" (Peterson, Personal Interview). While there are stations that combine light and profitability (such as the IFC Mall in Hong Kong), it is true that no one argues against Penn Station's monstrous contemporary design.

> Any city gets what it admires, will pay for, and, ultimately, deserves. Even when we had Penn Station, we couldn't afford to keep it clean. We want and deserve tin-can architecture in a tinhorn culture. And we will probably be judged not by the monuments we build but by those we have destroyed (New York Times Editorial, 1963)

Figure 4.1B: *Old Pennsylvania Station (Historical Photograph) and Today's Concourses*

Congested and unnavigable, the busiest rail station in the United States is undoubtedly a national embarrassment (Muschamp, 1993). Pennsylvania Station, built by McKim, Mead, and White for the profitable Pennsylvania Railroad in the early 20th century, was undoubtedly a neoclassical masterpiece. Designed with industrial materials, including plaster, steel, and masonry, the hub streamed ample light inside, and allowed for comfortable pedestrian flows.

Financed in part by the value capture of nearby real estate – such as the Pennsylvania Hotel – this station would stand firm until its destruction in 1963. Unappreciated by a railroad in decline and disrespected by a city ruled by Robert Moses, air rights were sold for the construction of Penn Plaza skyscrapers and for the fourth iteration of Madison Square Garden (Caro, 1975). Transportation hubs are designed and destroyed in accordance to contextual social, economic, political, and physical factors. Joint development practices, which can coincide with self-sufficient and revenue-generating policies, can also clearly be self-destructive and relatively unsustainable. Now that Madison Square Garden may be moving relatively soon, Pennsylvania Station may finally be reinvigorated once again. While plans for a renovated Penn Station have continued to be released, the fervor of renovation has increased due to the eventuality of the relocation of Madison Square Garden.

New York's privately developed subways in the early 20th century were partly funded by value capture, but now the MTA only captures real estate revenue from leasing retail space at Grand Central Terminal (which it leases itself), and from $1 billion as part of a 99-year lease at the Hudson Yards (Smerd, 2010). While there are no value capture mechanisms for the MTA to recapture increased property values along Second Avenue due to the Second Avenue Subway (Jaffe, 2013), the MTA was able to fund the extension of the 7 Line to Hudson Yards through collaboration with the City of New York and value capture taxes. Indeed, the Hudson Yards was financed by commercial development, with 28 million square feet of new offices planned by 2035 (Petro, 2014). The MTA's extension was financed by New York City, and with additional property taxes providing nearly half of the revenue raised through value capture. This will not be possible in East Harlem, as the neighborhood is generally built-up to the maximum density allowed with today's zoning.

The real estate market of Midtown Manhattan today is quite different from that of Lower Manhattan following the terrorist attacks on September 11th, 2001. Yet it was around this time that the MTA began planning the Fulton Center, in order to revitalize Lower Manhattan. Additional joint development atop the Fulton Center was considered, but seeing as the real estate market in Downtown Manhattan was unstable, the MTA decided against it. According to Robert Paley at the MTA Real Estate Department, if the MTA were to build up at the Fulton Center and then struggle with vacancies, the tax-payer funded structure would receive heavy criticism (Paley, Personal Interview). Plus, as stated by Subutay Musluoglu, a prominent cartographer and historian, the World Trade Center remains largely vacant today. Additional commercial real estate would not only also be struggling, but it would be competing with the Port Authority's World Trade Center (Musluoglu, Personal Interview). Seeing as the Governor appoints members to the MTA and the Port Authority, he controls supposedly independent agencies.

There are passageways in New York that could be transformed for retail. According to John Tauranac, a world-renowned New York historian, who has designed ample city maps and transit maps, the Gimbels Passageway between Penn Station and Sixth Avenue could be reopened, as could the Sixth Avenue stretch between 35th and 40th Streets at Bryant Park. Additional passageways and concourses, such as the West 4th Street concourse, seem "perfectly feasible as a real-estate possibility" (Tauranac, Personal Interview). Andrew Bata, Chief of Global Best Practices at MTA New York City Transit, agrees that "linking up with real estate opportunities… is the way to go" (Bata, Personal Interview), and concurs that the Gimbels Passageway should be re-opened and expanded to allow for enough entrances and enough space to add a decent amount of retail. The area would definitely have enough people to support businesses. Unlike the MTR, most MTA stations wouldn't have enough traffic, and most

concourses are too narrow, but Midtown could be an exception. Robert Paley, Director of the T.O.D. Group at the MTA Real Estate Department, stated that the MTA is actively working to transform practical spaces with retail.

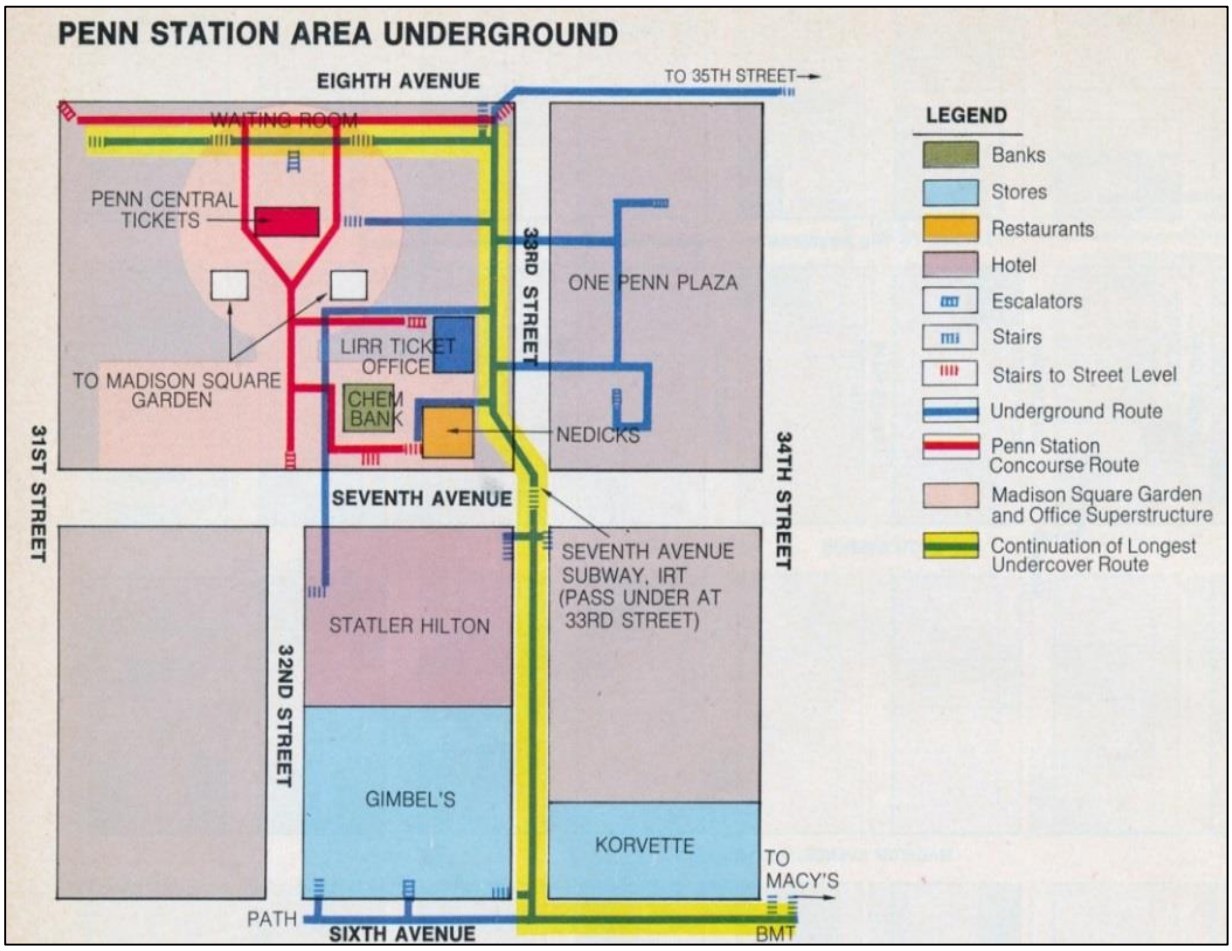


Figure 4.2B: *Abandoned Midtown Passageways for Future PPP Retail (Tauranac, 2015)*

Mr. Paley also stated that the Corbin Building, a historical structure integrated with the Fulton Center, is being lobbied into a landmark so as to sell eligible air rights to a developer. Once a developer acquires nearby parcels, a zoning lot merger could take effect so the MTA to transfer development rights. Multiple other sites are also being considered, and many have already been developed in exchange for improvements to MTA infrastructure vis-à-vis transit bonus funds (see Table 1).

Transit Bonus Projects

Transit Bonus Project	Year	Bonus FAR	FAR sf	Page
599 Lexington	1984	2.7	146,293	4
Hines Building	1984	2.7	71,544	5
Zeckendorf Towers	1985	2.0	153,006	6
Worldwide Plaza	1986	1.3	200,000	7
New Colisum Project	1986	3.0	448,260	8
Citicorp - Queens	1986	13.0	1,068,093	9
Hearst Tower	2002	3.0	120,000	10
Court Square 2	2006	13.0	533,273	11
45 Courthouse Sq	2010	13.0	147,147	12
15 Penn Plaza	2010	3.0	480,000	13

Other Project	Year	Bonus FAR	FAR sf	Page
One Vanderbilt (proposal)	2014	12.3	528,900	14-15
Philip Morris (Covered Pedestrian Space bonus and landmark transfer)	1979	3.0	62,000	16
383 Madison (landmark transfer)	1998	-	-	17

Table 1: *Press Release: Transit Bonus Projects (Metropolitan Transportation Authority, 2014)*

While the MTA has also been exploring the development of the Low Line in the Lower East Side, a potential new underground park on the site of an abandoned trolley terminal, London's joint development ideas are also inspiring. Transport for London, which has been building Crossrail, a new extension in the center of the city, has been financing many projects through real estate development (Paley, Personal Interview). Moreover, a recently released proposal known as the London Underline for disused subway lines has won a London Planning Award. According to Gensler, a design firm, the London Underline regenerates "the disused metro tunnels and surplus infrastructure around London" by turning spaces into "a network of pedestrian and cycle paths with cultural and retail spaces powered by Pavegen, a kinetic energy system converts footsteps into electricity" (Marrero, 2015). Gensler continues: "with current pressures on London to cope with future transport capacity for pedestrians, cyclists and tube users, London is in desperate need for new types of public and community space, as well as

affordable retail, commerce and entertainment spaces… Subterranean spaces present an excellent option for new uses". Similar concepts are being explored in New York.

Aaron Donovan, Deputy Director for External Communications at the Long Island Rail Road and Metro-North Railroad for the MTA, concurs with Mr. Paley. The MTA has been conducting a thorough review of its portfolio since the mid-2000s in order to identify opportunities for value capture. Hundreds of parcels have thus far been examined, but only a relatively handful can be sold. This is due to multiple factors, including a 1953 master lease between the City of New York and the MTA, which allows the MTA to operate New York City Transit (NYCT) on city-owned land (Donovan, Personal Interview). Thus, many of the MTA's parcels are actually owned by the City, and many that are not owned by the City are simply too small or in far-flung locations. Additionally, spaces within passageways and concourses that may appear to be able to host retail often cannot due to a lack of access to water and ventilation, as well as due to passenger flow considerations. While the Long Island Rail Road and Metro-North Railroad are not subjected to the 1953 master lease, as they extend beyond the City's borders, their private predecessors often sold all profitable assets during bankruptcy processes. Even tracks were auctioned off to property owners and sold for scrap. Due to the MTA's lack of assets, Mr. Donovan confirmed that the MTA was open to all possibilities for future revenue.

Transit was never designed with adequate real estate spaces. The three separate companies that were brought together by the mid-20th century into the NYC Board of Transportation (and later, the MTA), were designed for a dense, booming city without ample car ownership, akin to Hong Kong and Tokyo today. But they simply did not develop concourses and passageways for retail. The Interborough Rapid Transit Company (IRT) and Brooklyn-Manhattan Transit Corporation (BMT) were privately operated and under contract to the city in

various public-private partnership agreements. The Dual Contracts, for which the city would build new elevated and subway lines, whilst rehabilitating and expanding other lines, and then lease these routes to private companies, was undoubtedly one of the most important partnerships of New York City. The City, which raised cash through bonds, and the companies, which supplied cash, facilities, and equipment, worked together to plan New York's future. Even though these contracts did not consider future self-sufficiency concerns, according to Peter Derrick, a prominent transit historian, they nevertheless saved New York from catastrophe:

> In 1910, New York City was bursting at the seams as more and more people crowded into a limited supply of housing in the tenement districts of Manhattan and the older areas of Brooklyn. New York faced a serious crisis which city and state leaders addressed with dramatic measures. In March 1913, public officials and officers of the two existing rapid transit networks shook hands to seal a deal for a greatly expanded subway system which would more than double the size of the two existing transit networks. (Derrick, 2001).

The Fulton Center, planned following the September 11th attacks, did not include much thought to joint development, just as the original subways were not constructed with adequate spaces for retail. The center was designed to be Lower Manhattan's Grand Central, with ample light pouring into a concourse. Yet Grand Central was built by a profitable railroad, which built the Helmsley Building atop the terminal, and later, the Pan Am Building. The Fulton Center's area is significantly smaller, so actions at this scale would not have been possible, but the fact remains: the MTA is not a profit-seeking entity. However, Westfield, an Austrialian developer, is profit-seeking, and has agreed to operate and maintain the MTA's retail spaces in the Fulton Center. According to *The Bond Buyer*, in 1994, the MTA earned $7 million in rent at Grand Central, which was $15 million in 2002 and $27 million in 2011. Moreover, according to the MTA's Press Releases, requests for proposals for eight additional properties, as well as development atop five facilities, have been released, yet 3,944 properties are not suitable for

development because they are needed for operations, or because they can only be monetized in conjunction with larger comprehensive development schemes.

Ellyn Shannon, Associate Director at the Permanent Citizens Advisory Committee to the MTA, understands the importance of making the MTA's data more understandable and accessible. Keenly aware of the MTA's spaces that could be redeveloped, such as the mezzanine at West 4th Street in the Village, Grand Concourse in the South Bronx, and even the Low Line Park proposal in the Lower East Side, Ms. Shannon hopes the business community will advocate for transit investment and partnerships with the MTA (Shannon, Personal Interview). For instance, in East New York, Brooklyn, there are ample opportunity sites for development and affordable housing, and the Atlantic Branch of the Long Island Rail Road could be repurposed as an express subway route, due to East Side Access rerouting work at Jamaica Station. A NYC Department of City Planning (DCP) study, Sustainable Communities: East New York (2014), is a comprehensive study recommending increased density along subway corridors that are already zoned for ground-floor retail. East New York is an area in the outer boroughs which could use a social, economic, political, and of course, physical boost towards the sky.

In conclusion, a number of public-private partnership opportunities for the MTA are being explored. Air rights transfers are being discussed, and developers are also planning sites nearby stations, such as SL Green's One Vanderbilt near Grand Central Terminal, and Vornado Realty at Penn Plaza near Penn Station. These developers will be paying for transportation improvements, such as enhanced connectivity and capacity infrastructure. Moreover, the Hudson Yards will be New York's next neighborhood, and it will finance the extension of the 7 Line.

CHAPTER FIVE: ENVISIONING A RENEWED MTA

5.1: JOINT DEVELOPMENT'S INHIBITING FACTORS IN NEW YORK

Robert Paaswell, a Distinguished City College of New York (CCNY) Transportation Professor, elucidated that the MTA Board of Directors does not feel as though they are in the real estate business and that the MTA is solely a transportation service (Paaswell, Personal Interview). As the former Director for the CUNY Institute for Urban Systems, Professor Paaswell also stated that New York State dislikes funding the MTA, considering it a black hole, even though the State elects quite a few members of the Board. Professor Paaswell, who was the Interim President of CCNY, believes that the Board's cultural inertia does not allow for the reformation of the MTA into an information-rich, customer-focused business. Professor Paaswell cited the power of developers and unfair tax structures allowing for the MTA to foot the bill for investment, while receiving nothing in return. While the indebted Port Authority (and PATH) in NY and NJ is legally self-sufficient, relying on tolls, fares, and real estate revenue at the region's three airports and at the World Trade Center and Port Authority Bus Terminal, it too is indebted due to corruption, mismanagement, and expensive projects at the World Trade Center (see Figure 5.1). In fact, Santiago Calatrava's transportation hub for PATH trains is the most expensive transportation station ever built on the planet.

Figure 5.1: PA Bus Terminal (Left); WTC PATH Hub (Center, Right)

As it stands, as stated by an anonymous city official who worked on the Hudson Yards redevelopment project, working with the MTA on the Hudson Yards redevelopment was a tedious process. The official, who worked for Mayor Bloomberg, described how painful it was to get the MTA to pay attention, move quickly, and push through the redevelopment process. According to the official, popular observers frequently overstate the MTA's assets, attributing the MTA's deficit and debt to a wasteful public authority. These observers do not understand that rail yards are not all created equal, with the Hudson Yards being a unique opportunity which cannot be replicated elsewhere. The real estate demand in Midtown Manhattan is far greater than elsewhere in the city, and even still, the redevelopment process is taking years. The construction of platforms and ventilation systems is expensive, as these platforms cannot interfere with operations (City Official, 2015). Moreover, a larger site takes longer for development to take place, which brings less value to the MTA, which is not operating in a vacuum. Competing priorities for affordable housing on the site and for the subway expansion to be funded by (luxury) development also contributed to the slow process, alongside the numerous stakeholders involved, ranging from the Hudson Yards Development Corporation (HYDC) to the operating agencies of the MTA. As stated by HYDC:

> Since 2001, the City of New York, Metropolitan Transportation Authority, and the State of New York have collaborated on extraordinary planning initiatives to create a development program that will transform the Hudson Yards area into a vibrant, pedestrian-friendly, transit-oriented mixed-use district. The new Hudson Yards district will accommodate a major and vital expansion of the Midtown central business district, as well as job growth and new housing for the City's growing population… As rezoned, the Hudson Yards area now has capacity for approximately 26 million square feet of new office development, 20,000 units of housing, of which almost 5,000 units will be affordable units, 2 million square feet of retail, and 3 million square feet of hotel space. (Hudson Yards Development Corporation, 2015)

Figure 5.2: *Covering Tracks for Development at Hudson Yards, New York City*

The anonymous city official's assessment of the MTA's assets is similar to that of Robert Paley, Director of the T.O.D. Group at the MTA Real Estate Department, who agrees that the media ignores the reality of the MTA's limited real estate portfolio. Mr. Paley is concerned that legislators fail to provide funds due to a false belief that the MTA is not pursuing capitalization of everything they control. Yet, amongst many plans, the MTA is working with Vornado Realty to widen passageways and add amenities under a proposed skyscraper at 15 Penn Plaza near Penn Station in exchange for a zoning bonus. Indeed, according to the New York Times:

> Vornado is hoping to construct a 2.05 million-square-foot office building, exceeding what is allowed under the current zoning. In exchange, Vornado agreed to build and maintain transit improvements, including reopening the Gimbels Passageway that connects Herald Square and Penn Station. Under the proposed plans, it would transform the passageway, which was closed in the 1980s, into an 800-foot pedestrian concourse to rival Rockefeller Center. (Satow, 2011)

The MTA also sold air rights to a developer for the ground lease of the Hudson Yards, which was then converted to sell excess development rights and transferrable rights. The MTA received approximately one billion dollars for these air rights, and several hundred million dollars for additional leases at the Eastern Rail Yard of the Hudson Yards. These funds were used to extend the 7 Line to the Hudson Yards as part of the largest privately financed transportation project in the country. Possible due to close collaboration between various

stakeholders, the connection between transit and land use, which had been lost for decades due to the externalization of transportation benefits, was applied in Hudson Yards.

Jay Walder, former Managing Director for Finance and Planning at Transport for London (TfL), former Chairman and CEO of the New York MTA, and former CEO of the Hong Kong MTR, has a unique perspective on the institutional differences between the MTA and MTR. According to Mr. Walder, both the MTA and the MTR would have developed the Hudson Yards, but they would have approached the deal differently. The MTR would have been more involved in the planning process, seeing the private developer as a long-term partner rather than a short-term hand-off; indeed, the MTR would seek a continual stream of revenue, while the MTA would look for a quick, lump sum payment (Walder, Personal Interview). The MTR would have sought to integrate the plan completely with the subway entrances, while the MTA would not be as concerned with funneling passengers into retail concourses. After all, the MTR has always sought value capture revenue, and the relatively centralized Hong Kong government forces allow for land to be distributed to the MTR, which leases property. In New York, developers have a lot more power, and the MTA is a New York State authority functioning in New York City with local, mayoral land use and zoning laws. These differing forces make synthesizing and measuring a potential a value capture mechanism difficult, leaving the MTA with air rights transfers along eminent domain parcels of the Second Avenue Subway route as a small opportunity in a big city. The city and the state need to together to develop a value capture proposal with land use and zoning amendments.

As it stands, many stakeholders benefit from the MTA in New York. Value accrues to private landlords and to city and state budgets, which then allocate funds to the MTA. Instead of the MTA receiving revenue directly, a reform which would be highly unlikely, developers

should work to advocate for increased funding for the MTA. However, in a global economy, corporations may have offices in New York, benefitting from the services that the MTA provides, but they are relatively placeless. Since the MTA benefits so many stakeholders, with broad and diverse benefits, it is difficult for particular interests to lobby for the MTA. It touches so many people that it touches no one in particular (Paley, Personal Interview). Libraries and various public agencies in New York are allowing developers to build atop their properties, in order to get a free renovation and in order to have a generous roommate. Developers are also doing infill on New York City Housing Authority public housing property, and paying for parks, such as the Brooklyn Bridge Park. The same practices are being carried out for the MTA, even though they have limited real estate assets. When they have assets, they are restricted by antiquated zoning laws, onerous financing, a lack of communication between municipalities and developers, NIMYism, and a fear of density. Residents always oppose increasing density, fearing it will increase traffic, clog schools, and even stress sewage systems.

As pointed out by Aaron Donovan, Deputy Director for External Communications at the MTA, and Robert Paley, Director of the T.O.D. Group at the MTA Real Estate Department, many people will oppose increasing density, even near subway corridors. Meanwhile, the MTA does not have the money to buy land, which is a timely process, coming lot, by lot, by lot. Plus, if land is up-zoned, then it is more expensive, making it even more costly for the MTA. How would the media, the public, and the politicians be convinced that this will not be wasteful? It will take years to pay off, which is difficult for politicians to accept, since they want to be re-elected in the short-term. Politics gets in the way of opportunities. These professionals work extremely hard every day but change is a slow, slow process in New York nowadays. Government agencies are not good at speculative development.

Moreover, many observers will note that the MTA has quite a lot of property. But most of this is needed for operations, and if it's not, it's expensive to overbuild and transform into raw land. Considering most of the MTA's yards and bus depots are in far-flung locations, the costs still outweigh the benefits for most developers. These are depots, and not stations, so there would not be people fueling T.O.D. retail and fare revenue; Hudson Yards and Atlantic Yards are exceptions because they will be interconnected with transit. This is why the MTA focuses on selling air rights. They do not have the resources that a developer has, and even if they did, they would not want to be in the real estate business, let alone the decking business.

Unlike the MTR, which operates profitable subways in Hong Kong while developing property, the MTA is not privatized, and it operates in an entirely different legal environment. China does not have to deal with community opposition; they'll just plow forward. The MTA, meanwhile, is the front door to criticism, and it also faces many stringent rules and regulations governing public authorities. All construction needs to be 100% union, raising costs, and the MTA cannot necessarily use capital money for development. There are strings attached to all money received and this bureaucracy also inhibits real estate finance for a public authority. The government cannot do speculative development. They can't even do feasibility, engineering, and budgeting studies; they need to contract these services to the experts.

Still, the MTA has limited real estate expertise. They need to work with developers, engineers, architects, and the EDC, DCP, and DOT. The EDC acts as an agent for disposition of City property interest in NYCT master lease parcels; the DCP needs to rezone the property to allow residential and issue special permits required for transit overbuilds; and the DOT determines the need for street bridges or de-mappings. The MTA, therefore, works with EDC,

DCP, and DOT to analyze existing conditions, from land use, zoning, and community needs, to market prospects and demographic trends, and eventually, they underwrite and release RFPs.

The MTA Real Estate Department lacks resources, while MTA Headquarters lacks coordination with New York City, New York State, and the MTA's operating agencies, such as Long Island Rail Road, Metro-North Railroad, and New York City Transit. According to the Permanent Citizens Advisory Committee (PCAC) to the MTA, "while New York State offers a number of diverse incentives to encourage Smart Growth, it does not have the capacity to measure the performance of their recipients, nor does it coordinate state policies or spending to further Smart Growth objectives" (Henderson, 2006). The New York Metropolitan Transportation Council (NYMTC), which is the metropolitan planning organization (MPO) for the region, also does not have a quantifiable T.O.D. strategy. Even still, according to the PCAC:

> The MTA region is particularly suited to Transit Oriented Development because of its vast transportation infrastructure. In September 2004, Reconnecting America, a prominent national TOD advocacy organization, noted that the New York metropolitan area is expected to create more demand for additional housing within one half mile of a transit station than any other metropolitan area. The MTA and its operating agencies could further their interests by substantially increasing their support for Transit Oriented Development. TOD opportunities can generate revenue from developers that use MTA properties and create a stable base of new ridership for the railroads. (Henderson, 2006)

The Real Estate Department leases retail spaces throughout North America's largest transportation network, which serves 15.1 million people and carries approximately two-thirds of the nation's rail riders, at over 8 million riders each weekday. Retail opportunities range from "newsstands and cafés to bookstores and full-service restaurants", and the department also manages parking lots and industrial spaces (MTA, 2014). Grand Central Terminal has more than 90 retail outlets, and the department manages over 4,000 occupancies as a whole. Additionally,

advertisements on subway cars, buses, stations, screens, billboards, and MetroCards are organized by the MTA Real Estate Department.

According to the Permanent Citizens Advisory Committee, New York State must initiate reforms at the executive and legislative levels in order to catalyze cooperation amongst state and local agencies. Meanwhile, NYMTC "can exercise leadership in moving the region to more sustainable development patterns through its transportation planning programs" and "it can also provide background data and information to assist local planning efforts that further TOD" (Henderson, 2006). Moreover, the MTA "is in a unique position to facilitate TOD and to provide improved linkages between transportation infrastructure and land use" and "the MTA can help to guide that form and provide for a stable future ridership by acting to make the MTA system and the region's communities complement each other" (Henderson, 2006).

The resignation of MTA Chairman Jay Walder highlighted the problems facing New York's bureaucratically bloated transportation infrastructure, and it also elucidates the opportunities in Hong Kong for American executives. Mr. Walder began working for the MTR Corporation, one of the few profitable public transportation providers in the world. The MTR's profit is due to ample joint developments, which are difficult to consummate in New York's toxic political environment, where resources continue to be limited or even eliminated due to state politics. New York's competitiveness relies upon public transportation infrastructure, akin to Hong Kong, but the MTR ended 2010 with $1.56 billion profit (Smerd, 2011). New York mainly makes money leasing retail space at Grand Central Terminal, and from $1 billion as part of a 99-year lease at the Hudson Yards (Smerd, 2011). However, they are working to dispose other properties throughout the five boroughs (see Figure 5.3).

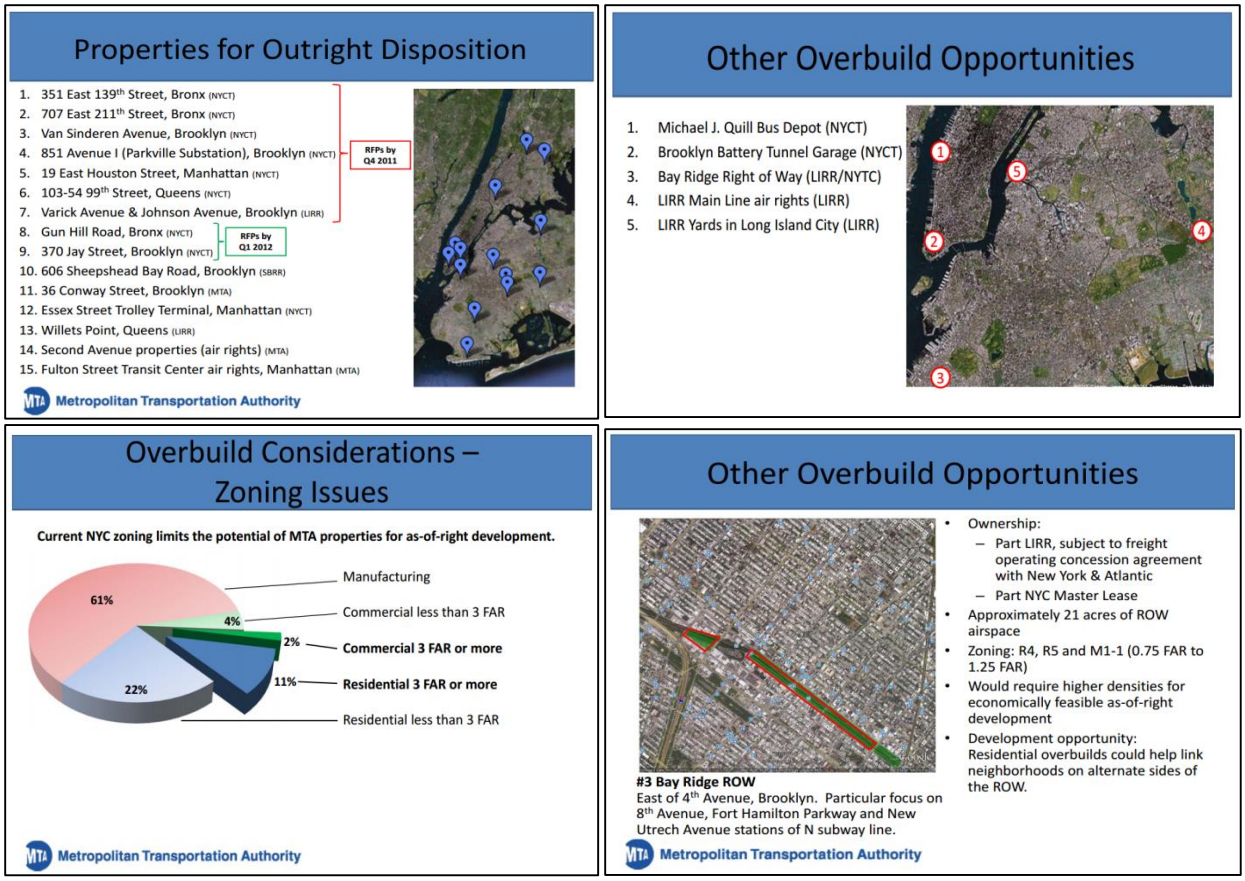


Figure 5.3: *MTA Joint Development Opportunities (MTA, 2014)*

Even though businesses thrive on the MTA, the business community oddly are not pressuring lawmakers to fund the MTA. According to Seth Pinsky, a former President of the NYC Economic Development Corporation, "'we've lost sight of the fact that some public investment does in fact generate returns'" (Engquist, 2015). Moreover, Joan Bryon, Director of Policy at the Pratt Center for Community Development, believes that "'the real estate industry needs to step up for state-of-good-repair as it has for expansion'" while "referring to developers' support for projects like the Fulton Transit Center and the extension of the No. 7 train to the West Side" (Engquist, 2015). Yet it is hard to communicate to all of these stakeholders.

Communication between DCP and the MTA, as well as with developers, could be improved; even within the MTA, departments are quite isolated from each other, to say nothing

of public awareness for transportation investments in the Big Apple. DCP tends to up-zone neighborhoods without the City providing any funding for MTA capacity improvements. Meanwhile, the MTA is accountable to the Board of Directors, largely appointed by the Governor, who cares about getting elected and not disturbing the status quo of the public unions (Musluoglu, Personal Interview). Reform is quite difficult because management is often intimidated by unions, and elected officials do not want to alienate any constituencies. As such, projects are completed slowly and expensively or not at all. The MTA is often uninterested in maximizing revenue from existing (limited) real estate assets, yet they are quick to demand more funding. Agencies do not want to work with each other due to sheer politics and the lack of powerful national railroads. Unlike Europe, American states and local municipalities tend to have a lot of power, limiting the power of most municipal planning organizations (MPOs), such as NYMTC. Today, the MTA has record ridership, and countless plans have been devised for improvements, ranging from station enlargements and driverless trains to through-running regional extensions to New Jersey and Long Island. These windows of opportunities are often passed due to the "balkaniation of authorities" in the New York region (Musluoglu, Personal Interview). Indeed, the British did not only mess up state boundaries in Africa and Asia, but also in the New York region. Charles II decided to divide New York and New Jersey along the Hudson River, never realizing that it would tangle the operations of a future global city.

In order to improve communications and dealings with private developers, the three-person Office of Transit-Oriented Development was established in 2009, with Robert Paley at the helm (Satow, 2011). Yet with more than 600 miles of subway track and more stations than any other subway system in the world, Mr. Paley's team has a lot of work to do. From acquiring buildings, relocating and swapping properties, planning redevelopments, negotiating leases, and

managing portfolios, to strategic planning, valuation, feasibility analyses, and dealing with consultants, this team does not catch a break. Now that zoning requires developers in high-density areas to move nearby subway entrances into their property lines and renovate them, communication with private developers has increased. Even still, the MTA leadership does not seem to consider itself a real estate developer, but that is because it lacks the expertise and resources to be successful in the industry. The Real Estate Department needs additional resources, and the mindset needs to be changed, in order to return to the glory days of transportation finance and joint development.

5.2: JOINT DEVELOPMENT OBSTACLES THROUGHOUT THE UNITED STATES

Unlike many regions, the New York metropolitan area encompasses multiple states, yet the same is true of the Washington D.C. Metro, which continues to coordinate joint development practices in Virginia, Maryland, and D.C. Moreover, Southern California is "in the midst of a transformation driven by an influx of investment into new and existing public transit" (Neighborhood, 2015). In Los Angeles, "transit is at the center of efforts by planners, community groups, housing developers, elected officials, and land use attorneys to promote development that will lead us to a cleaner, greener, and more prosperous future" (Neighborhood, 2015). Roger Moliere, the Director of Real Estate Development for L.A. County Metro, leads a $5 billion joint development program, with 30 public-private partnerships ongoing across the county (Moliere, 2011). The agency leases land to developers in order to maintain T.O.D. control over properties, but the land is not originally acquired for development purposes (Moliere, 2011). The increased density atop stations has alleviated congestion and made Los Angeles a better place to live, work, and play; indeed, a paradigm shift is occuring, with more and more Angelenos wishing to live in urban environments. Indeed, three physical attributes of T.O.D. are "thought to significantly increase transit ridership and thus distinguish them from other urban settings; these are the three dimensions, or 3-Ds, of what we believe make for successful transit villages: Density, Diversity, and Design" (Bernick 1997, 73). Los Angeles is exploring all three.

As with the Fulton Center, for which the MTA was careful to not undertake risky real estate deals after September 11th, Metro is a public agency and receives plenty of oversight. According to Mr. Moliere, "One of the things about a public agency that make it a bit ponderous also make it a bit safer is the process for selecting contractors and paying them" and "all of those things are highly audited and highly structured, such that you minimize the opportunity for

mischief" (Moliere, 2011). Nevertheless, Metro has been proceeding with joint development opportunities throughout the county, especially at Union Station, the hub of Southern California. Three million people a month enter the station, with 42 acres and 5.9 million square feet of entitlement attached to the station, allowing for ample retail opportunities.

In Chicago, joint development has also increased revenue, ridership, and property values, and improved the urban form around renovated stations. The North and Clybourn Red Line CTA station, for instance, was renovated by Apple, as the company was developing an Apple Store on the property (see Figure 5.4). In this case, the public and private interests were combined, and a private partner willing to invest was met by a public agency willing to be entrepreneurial in a healthy real estate market. The mission and vision were not blocked by prohibitive legislation or complicated property rights, but many similar cases are blocked by a lack of formal guidelines, coordinated zoning, and public outreach. According to Danielle Dai, who researched the CTA:

> Fostering joint development is a worthwhile goal in Chicago, as it will support public transportation and provide considerable benefits to the transit agency, the private partner, and the general public. Joint development has the potential to encourage transit usage, enhance property values around the transit improvement, spark new development or redevelopment, increase revenues, and support urban planning principles that improve urban form. While Chicago's aging transit system faces unique challenges in leveraging private investment, these challenges can be overcome. The success of the CTA and Apple public-private partnership for the refurbishment of the North and Clybourn Red Line station demonstrates the potential of planning and implementing joint development projects in Chicago. (Dai, 2011)

Figure 5.4: *North/Clybourn Red Line Station (Plus, Apple Store and Starbucks), Chicago, Illinois*

5.3: BRIDGING THE GAP WITH TRANSFORMATIVE TRANSPORTATION

New York City's former railroads built transportation hubs that tended to make relatively more financial sense. But these hubs are found in the rest of the U.S. as well. In fact, entire cities are around today because of transportation hubs. Atlanta was developed at the intersection of railroad lines, and so was Dallas, among so many other cities. Abandoned hubs can be found in many cities in the U.S., such as Detroit's Michigan Central Station (see Figure 5.5) and Buffalo's Central Terminal. These huge buildings had plenty of commercial space. Now they sit abandoned in shrinking, auto-oriented cities. But hubs are not the only abandoned pieces of infrastructure. Many railroad lines were also simply destroyed, with homeowners buying up the land and actually selling the metal. Today, to rebuild these lines, we'd need billions of dollars. In cities that have not shrunk to such an extent, and which have had more pioneering leadership, transportation hubs have been transformed into mixed-use centers of shopping and work. In Philadelphia, the historical Reading Terminal and Suburban Station were built with transit-oriented development in mind, and they have been successfully integrated into the cityscape.

Figure 5.5: *Top: Detroit's Michigan Central Station*
Bottom: Joint Development at Reading Terminal (L) and Suburban Station (R) in Philadelphia

While joint development used to be commonplace, as seen through the Michigan Central Station in Detroit and Buffalo Central Terminal, now abandoned and decrepit, future development proposals in New York from Robert Stern's *New York 2000: Architecture and Urbanism between the Bicentennial and the Millennium* elucidate new proposals for joint development in New York that have been considered for generations. Proposals are clearly advocating for joint development atop transportation hubs, such as the South Ferry Terminal in Lower Manhattan (see Figure 5.7), and Pennsylvania Station in Midtown. However, ample light appears to be paramount in the Penn Station restoration, even with joint development being practiced at the Amtrak terminal. Moreover, San Francisco is actively constructing the Transbay Center, an intermodal hub with commercial office towers, directly in downtown (see Figure 5.6). This mixed-use master plan incorporates the concepts of postwar urbanism, borrowing from Bertrand Goldberg's Marina City in Chicago, yet for transit-oriented development.

Figure 5.6: *Top: Transbay Transit Center Joint Development Construction, CA*
Bottom: Joint Development Proposals (South Ferry Plaza and Penn Station, NY) (Stern, 2006)

With government spending cuts continuing to threaten discretionary programs, such as transportation, increased efficiency will allow transportation systems to provide the same level of service with less funding. Value capture must become a sustainable funding source for transit agencies (Levinson, 2011). To that end, Amtrak is considering developing the Sunnyside Yards, in Queens, which is one of the largest undeveloped parcels of land in New York City, in order to provide extra revenue for the corporation (Hutchins, 2014). Mayor Bill de Blasio, on the other hand, proposes to build 11,250 affordable apartments, while Governor Cuomo "called the property the staging area for… the tunnels that will bring the Long Island Rail Road" to Grand Central (Hawkins, 2015). The 200-acre property would first need to be developed with platforms of varying heights atop soft soil and over active tracks used by Amtrak, the LIRR, and New Jersey Transit (Hawkins, 2015). Yet "the puzzle-piece layout of property lines within the yard could make it difficult to deck over the tracks without consensus between the MTA and Amtrak,

the owners of the choicest pieces of land" according to the city (Hawkins, 2015). The development of the site, according to Seth Pinsky, former CEO of New York City Economic Development Corporation (EDC), would be a "30-year project where probably 50% of the costs will be incurred in the first five years". According to Mr. Pinsky, "it's decking, it's sewers, it's electricity… you're building from scratch" (Hawkins, 2015). But once it's built, T.O.D. increases land values, which can assist these agencies with future value capture policies (Cervero, 2002).

Figure 5.7: *Sunnyside Yards Joint Development Opportunities*

By taxing land at a higher rate than buildings, developers can retain more of the profits from their investments next to transportation infrastructure. Since transportation increases only the land value, and since a significant percentage of funding comes from local property taxes, this could be a good way to increase density, development, and funding (Junge, 2012). Because railroads have fixed costs, railroad profitability rises with increased ridership, which increases with increased density. Today's railroad hubs often do not follow the example of St. Pancras and the Midland Hotel, leaving these opportunities for airports, which strive to be self-sustainable and self-sufficient, using commercial real estate and airline fees for revenue, instead of relying on a local tax base (Prokop, 2014). But once all of these factors are corrected, comprehensive designs for hubs with joint development and light can be designed once again in New York City. The density of Tokyo rivals that of Hong Kong. According to Mr. Vuchic, Tokyo has "a serious problem of extremely populated cities with limited available land and narrow streets", and as a

result, Tokyo has an extensive and efficient rail system (Vuchic 1999, 156). Moreover, "to accelerate economic growth after World War II, the Japanese government adopted a policy of constraining consumption, encouraging savings, and reducing labor costs", catalyzing the growth of public transit (Vuchic 1999, 156). According to *Transit Villages in the 21st Century*:

> A century ago, America's vast urban railway networks were built by entrepreneurs who packaged transit investments with real estate development. In Japan, and especially the Tokyo metropolitan area, this is still commonly practiced today. Nearly all suburban rail lines in greater Tokyo have been privately built, typically by large consortiums that link transit and new town development. In the United States, we have tried the model of publicly led transit and privately led land development over the past 50 years with disappointing results. This might be an area where we are well-advised to borrow from the past, encouraging developers to link transit and real estate projects just as they did a century ago, just as they currently do in Tokyo, and just as private tollway companies are attempting to do in northern Virginia and other parts of the United States (Bernick 307, 1997)

Figure 5.8: *Dense Retail at Tokyo Station, Japan (Riel, 2015)*

New York must take advantage of its empty spaces, and not just its underground spaces. It must get rid of zoning hassles that keep new housing on vacant lots from being built, thereby increasing the supply of housing and lowering the cost of living. It must also find out a way to bring incentives into public authorities, such as the MTA (Kirschling, Personal Interview). Public-private partnerships (PPPs) and associated contracts are a great way to

combine the efficiency, accountability, and transparency of the private sector with the regulations and anonymity needed to run public transit.

If the MTA does not have the tools to develop property, but it also lacks funding, perhaps a privatized development division of the MTA could be established. It would have to be entirely self-sufficient, and it would also have to provide the MTA will a stable source of revenue from leases or it will be shut down. This model would be the MTA's response to the City's Economic Development Corporation, which manages many of the City's assets. In fact, governments across the world have set up independent entities to manage their wealth, such as Singapore's government-owned holding company, Temasek, incorporated in 1974. By 2014, Temasek's portfolio grew "to more than $75 billion", while "across the globe, more than 20 national wealth funds manage more than $1 trillion in assets" (Orszag, 2015). Yet it is estimated that governments across the world have approximately $75 trillion in commercial assets, and most of this remains mismanaged (Orszag, 2015). If the MTA had a separate division for real estate development, it should follow Danielle Dai's recommendations for Chicago's CTA by:

> …Adopting formal, yet flexible, joint development guidelines or policies; supporting private sector participation through workshops; exploring opportunities within the zoning ordinance to encourage more investment in transit; encouraging the new transportation authorization bill to incorporate policies for joint development, value capture, public-private partnerships in transit, and transit-oriented development; and open public forums to foster communication about joint development deals (Dai, 2011)

This division would work with DCP and EDC in order to up-zone the MTA's assets, which are primarily in manufacturing districts, and it would have the expertise necessary to develop property. Of course, contracting work to engineers in order to conduct decking feasibility studies would still be necessary, but the MTA would have more manpower for its various deals. Most importantly, it would have a new narrative, and it would consider itself a real estate developer.

CHAPTER SIX: CONCLUSION

Al Qaeda destroyed one of America's most prominent transit-owned, transit-oriented, development hubs. The Port Authority of New York and New Jersey developed the World Trade Center and the PATH transportation hub below, as well as the underground mall that was one of the highest revenue generating properties anywhere in the world. The Port Authority, legally self-sufficient, cannot receive taxpayer dollars. It relies on real estate revenue from the World Trade Center as well as retail revenue (and transportation fees) from New York's three major airports and two major bus terminals. The PA also charges hefty tolls on its bridges and tunnels, as well as fees at its many ports. Controlled by both NJ and NY, politicians routinely send their expensive legacy projects to the PA, because they know that taxpayers will not foot the bill directly. Instead, users of the PA's bridges and tunnels foot the bill, with ever-increasing tolls.

The Metropolitan Transportation Authority (MTA), North America's largest transit network, has also been increasing its fares. The MTA moves 2.4 billion New Yorkers every year, 8.7 million customers every day, and accounts for one third of all transit riders in the U.S. Ridership has been increasing steadily, and has not been this high since the 1940s, with MTA ridership exceeding the next 16 largest U.S. transit networks combined. The New York metropolitan region has more people than the total population of Australia.

Portions of the subways of New York City are over 100 years old, and most of the subway was not built by the MTA, or even by the City of New York. Indeed, private, profitable railroads, such as the IRT and BMT, built the subway, in coordination with the City. At the time, few owned automobiles, and there were few highways, either. Cities were denser, and residents had only recently begun to rely on trolleys and trains, instead of horses, to move around the city. There was ample demand for subways in order to relieve congestion on the streets; in fact, the

City helped pay for sections of the subways that went into the outer boroughs, in order to alleviate slum-like-conditions in Lower Manhattan.

But at the time, the outer boroughs were far from developed. In fact, many elevated railroads were zooming over farmland, and goats could not pay fares to ride the subway. Even still, the City kept the IRT and the BMT from raising fares. Coupled with the Great Depression, inflation, and white flight, these private railroads could no longer stay afloat by the mid-20th century. The City unified these railroads, and Mayor LaGuardia hoped that this would increase efficiency. But it only destroyed the profit motive and gave more power to labor unions, creating more "financial waste and irresponsibility", which the Mayor had not foreseen. When the City, too, went bankrupt, the State took over the subways and the MTA was formed. Ever since, costs have skyrocketed and funding has been unstable and unsustainable.

Today, the MTA receives funding from fares, and from the City of New York and State of New York, but the relationship between the City and State is tenuous and strained. The MTA spends approximately 11 billion dollars on operational costs yearly, and an additional 5 billion dollars are spent on maintenance and improvement annually. The MTA owes $34 billion, which is more than the debt of most developing countries. Congestion pricing has been proposed to alleviate some of these dire financing concerns, but it is politically difficult due to resistance from outer boroughs and Long Island. Staten Island, for instance, has successfully advocated to remove outbound tolls from their bridges, in order to reduce congestion pollution in their borough, but this has created a loop for truckers through Staten Island, to Brooklyn, to Manhattan's Chinatown, and then back to New Jersey without tolls. Congestion pricing would equalize tolls, but many do not like change.

MTA funding remains unstable. The MTA receives a lot of revenue from the MTA's bridges and tunnels, which are the ones that were once controlled by Robert Moses, but DOT roads are not controlled by the MTA. The MTA also receives an "urban tax" from mortgage and property sale taxes, and this swings dramatically depending on the economy. It surged in 2007, resulting in $900 million; in 2009, it was only $149.7 million. Even though the MTA fuels the nation's largest economy, it is consistently cash-strapped because balkanized municipalities often do not share their prosperity with their transportation agencies.

Many pundits have proposed that the MTA can fill its financial gap through real estate development. They see the Fulton Center, and they think that, if only the MTA developed a taller building there and elsewhere, they would have no problems. They see empty yards, ventilation structures, concourses, and passageways, and they blame the MTA's bureaucracy for not seeking to capitalize upon existing assets. They say that private passenger railroads had been profitable, and they used their real estate in order to stay in the green. Only the latter part of their argument is correct, because today, the political economy of the United States has changed.

Indeed, railroads developed land, especially at hubs, forming cities from San Francisco and Dallas to Atlanta and Miami. Pennsylvania Railroad built New York Penn Station and developed nearby Hotel Pennsylvania. New York Central Railroad built Grand Central and developed Terminal City. The Hudson and Manhattan Railroad built the Hudson Terminal in Lower Manhattan, which is the predecessor to the World Trade Center. Elevated railroads connected Manhattan with Coney Island, building resorts at their terminals. Similarly glamorous hubs with offices, residences, and retail were built throughout the country.

But then came suburbanization, the Interstate, and the Jet Age. Plus, freight and mail were carried on railroads, but when USPS switched to trucks, it was the end of profitable

passenger railroads. People switched to cars and moved out of cities, with assistance from the federal government. In order to try and stay afloat, Pennsylvania Railroad allowed Madison Square Garden and Penn Plaza to be built, thereby demolishing Penn Station. The preservationist movement was founded after the 1960s Penn Station joint development in order to save Grand Central, and while Grand Central was saved, the MetLife Building (Pan Am Building) was still built atop GCT, literally signifying the Jet Age. When the private railroads went bankrupt, they sold their profitable assets to the private sector. Today, one man owns Grand Central and its air rights, Andrew Penson, and the MTA leases Grand Central for hundreds of millions every year. Most passenger railroads can no longer be profitable.

The MTA operates a 100-year-old system with plenty of maintenance costs. Transportation finance cannot rely on real estate development, which now has a marginal impact on the MTA's finances, because the authority has limited assets. Even though T.O.D. public-private partnerships are becoming more and more common, this is because transit-oriented development makes sense for other reasons. It increases density, fueling ridership and raising property values, thereby increasing revenue from property taxes. But it also supports sustainable livelihoods, creating more dynamic places to live, work, and play.

The MTA's property tends to be zoned for industrial use, which prohibits development. Selling air rights is only viable in hot markets, such as Manhattan. Most assets are needed for operations and cannot be sold. When it comes to decking over yards, most do not realize that it is extremely expensive and in most cases, not worth it. Overbuilds require support structures, and most yards do not have room for these columns. To deck requires shutting down operations, which is extremely expensive and inconvenient. Yards tend to be located in far-flung locations, where the market is not hot enough to justify development. Onerous financial

regulations are time-consuming and expensive. And, the MTA Real Estate Department lacks resources, with only 3 people in the TOD Group.

Unlike the legally self-sufficient Port Authority, the MTA does not view itself as a real estate developer. Developers must take on a lot of risk, and the MTA, as a public authority, does not want to take on this risk. Imagine if they built a taller Fulton Center, and then it remained vacant? The public would be enraged. This is also why the MTA will usually adhere to local zoning laws even though, as a state authority, it could possibly get away with ignoring them, while developers cannot ignore these laws. But, the MTA is chartered for transportation projects, and development often requires approval of the FTA and the MTA Board before property is developed or disposed. Plus, the MTA Board has many members appointed by City politicians, and NIMBYists are powerful. They can defend their land from being developed, but all of the people that would be living there in the future cannot defend themselves.

Today, zoning can incentivize developers to build transit amenities so they can build taller. Yet often, they will improve station entrances, but not maintain them upon completion. Still, Vornado Realty is exploring developing 15 Penn Plaza and potentially improving subway connectivity. SL Green is exploring developing 1 Vanderbilt nearby GCT and improving subway connectivity. The transfer of development rights (TDR) can allow developers to buy the MTA's air rights. But the MTA has limited assets and cannot be self-sufficient.

The Fulton Center in Lower Manhattan contains four stories of retail outlets. Air rights may be sold, but as it 'stands', the Fulton Center is a stump in Lower Manhattan. Why? It was planned after 9/11, and no one knew if Lower Manhattan would bounce back. Plus, the MTA did not want to compete with any office towers being planned by the Port Authority, and no one realized people would actually be moving to Lower Manhattan in order to live. The MTA is a

public authority, and it is risk-averse. It is easier to sell air rights than to develop property; speculative development is difficult for the public sector. Because the MTA is a public authority, it would rather dispose of property than develop it. It received a lump sum payment for the Hudson Yards, and developers have paid for the extension of the 7 Line to Midtown West.

This mindset is common for American transportation agencies. But in Hong Kong, the MTR Corporation is a profitable, privatized railroad and real estate developer. This model cannot be easily transported to New York's NIMBYist, political climate. Hong Kong is denser, and the central government willingly gives the MTR land to develop atop stations. The MTR is privatized and incentivized by shareholders to develop property. In China, the government owns all land, and leases it out for decades. This lease-hold system varies significantly from the U.S.

Unlike Hong Kong, we have a democracy, with technocrats held at bay by politicians that are supposedly doing what the voters want, such as funding trillion dollar wars in the Middle East while starving transportation infrastructure at home. In the U.S., eminent domain is only rarely used, and euclidean zoning codes keep our transportation agencies from developing property. In China, if you dislike density, it does not matter. In America, if you dislike density — and most Americans do — then you're likely to (literally) derail a project. Progressives are supposed to support change, but they often fight against change if it effects them personally.

The City and State must be pressured to reform the MTA for the 21st century. The Real Estate Department must be expanded. NIMBYism must be tackled by advocates in order to allow for greater density along subway corridors, thereby increasing the housing supply in our city. Zoning laws must be reformed and streamlined in coordination with the DCP, EDC, and MTA. But if affordable housing and parking requirements make decking projects unaffordable, the MTA should be exempt. If overbuilds are not feasible due to low floor-area-ratio (FAR)

requirements, MTA property should be up-zoned. If a transfer of development rights (air rights) is not feasible due to zoning lot districts, the MTA should receive an exception. The benefits "FAR" outweigh the costs. T.O.D. will not make the MTA profitable. We cannot transport transportation practices from the MTR, but we can translate them. We can do our best with the assets that we have available.

Many will tell you that America remains the land of the automobile. They may say that Americans continue to fear density, following in the footsteps of Thomas Jefferson, who wrote that "the mobs of great cities add just so much to support of pure government as sores do to the strength of the human body". After all, they say, America definitely had the room for this Manifest Destiny, so long as Native Americans were sent to reservations, inspiring South Africa's apartheid policies in the 1950s. They say our public transportation gets worse and worse because Americans consider it a service to the poor, like public housing, instead of as an investment for our collective prosperity. Americans have sprawled because our country's culture of individualism has latched itself onto the automobile, and because suburbs were America's response to dense Soviet planning.

But railroads allowed for U.S. expansion, and railroad hubs produced clusters of activity that would become cities from San Francisco and Dallas to Atlanta and Miami. The U.S. government gave land to these corporations, so that they could develop land, just as the central government in Hong Kong gives land to the MTR today. But our political economy has changed. Culture plays a role, but more important factors are at play, such as the relationship between the City and State, land ownership, and zoning. The MTA cannot be profitable, but T.O.D. should still be supported due to its proven role as a catalyst for strengthening the urban fabric.

Most New Yorkers are oblivious to the core problems facing our transportation network. Many do not even know that the MTA is a State authority, and not controlled by the City. So we must advocate for change, and mobilize New Yorkers to pressure their elected leaders, and raise awareness about the dangers of NIMBYism. We must show New Yorkers that even though we cannot *trans*port best practices from abroad, we can *trans*late them to our local context. We can *trans*form our *trans*portation infrastructure.

The Big Apple was the world capital of the 20th century arguably because no city could compete with its public-private partnership transportation network. The trolleys and elevated railroads ruled the city, but today, it is hard to imagine that there used to be railroads connecting to the subway on Second Avenue, Third Avenue, and Ninth Avenue in Manhattan; or on Fifth Avenue and Myrtle Avenue in Brooklyn. Even before then, railroads connected the city where the track has now been sold for scrap. Now, the city has as many subway riders as in the 1940s, with fewer track miles, and with an old system.

From the Transcontinental Railroad of the 19th century to the subways of today, physical mobility and socioeconomic mobility continue to go hand-in-hand, and the designs of a new hub reflect mobility and accessibility through a mixture of youthful light and joint development. Hopefully, the MTA will be able to develop a mechanism for value capture if it becomes more efficient in the future and overcomes organizational barriers. After all, New York State's public transportation network is the most heavily used and developed in the United States. Yet the state and its numerous authorities and municipalities have never been able to establish a stable funding strategy for the MTA. This is paramount in order for the region to remain globally competitive, because the entire reason why it became a global city in the 20th century was due to its world-

class subways, bridges, tunnels, highways, and ports. This is possible through designing hubs with joint development and light for the 21st century.

The bureaucratic disincentives at the MTA need to be reformed. A new narrative will only take shape when a new mindset has been formed. The MTA's mindset is not developed in a bubble; it is shaped by the economic and political conditions of New York, and the public also needs to adapt a new mindset in order to hold the MTA, the City, and the State to a higher standard. Politicians in the City and in Albany have big egos and frequently stall projects because they worry about elections. Clearly, real estate is rarely just about economics; it is about politics. The MTA does not control its own finances, and it definitely does not control zoning or air rights processes. People worry that the subways are already crowded and more TOD will only make living in New York more expensive and more crowded. This is a valid concern, but a positive feedback loop of increasing ridership should increase revenue, allowing the MTA to improve service. It would be easier to do so if the MTA was not strangled by politicians, who feel able to do so because the public does not understand transportation issues.

Hopefully, in the future, the TOD Group at the MTA Real Estate Department will have more than three people, or an independent, for-profit real estate development division of the MTA would be able to manage the MTA's assets. The division would have the proper incentives to not waste money because it will not be given a dime from taxpayer money. It would have enough staff to foster better communication with the Department of City Planning in order to up-zone MTA property, and in order to correspond with developers and build public-private partnerships. It would be able to work with advocacy groups that support YIMBYism and work to change the mindset of the public and of the MTA leadership. Additionally, joint development practices need to be streamlined and supported by the City and State. DCP needs to coordinate a

comprehensive up-zoning of MTA property in order to facilitate value capture. And advocacy groups need to pull together the various stakeholders and raise awareness about this idea.

The subway was world-class in the early 20th century. Arguably no other American city had built such glamorous stations, and they were, indeed, quite glamorous before all the grit. The IRT even had soaps and towels in bathrooms. They did not have to contend with the weather, or with daily traffic issues, which were not taken for granted at the time. They were also efficient, complete with express tracks and built right below the surface, allowing for a quick entrance and exit. All of this was completed without computers. Engineers had to move countless pipes, reorganizing them alongside the subways, but a large portion of the subway was constructed in virgin soil in rural locations (unlike today's Second Avenue Subway construction complexity), setting the stage for future development. From the Brooklyn Bridge and the subways to the water tunnels, the benefits of pooling resources to physically connect trumped partisan concerns of taxation and demographic paranoia, allowing for the City of New York to be consolidated at the turn of the 20th century. These private, profitable railroads developed the outer boroughs through value capture and joint development, alleviating the crowding of Lower Manhattan's slums and bringing New Yorkers to railroad-owned hotels in Coney Island.

Value capture and joint development are not new ideas. Transit-oriented development becoming transit-owned development will generate greater revenue not only from real estate, but from increased ridership. Density nearby stations will fuel ridership and support sustainable livelihoods. New York will be a more dynamic place to live, work, and play, and the MTA will have more funds necessary for operations and growth. Political resolve and inspired leadership are necessary in order to enhance, expand, transform, and transport New York's infrastructure into the 21st century and beyond.

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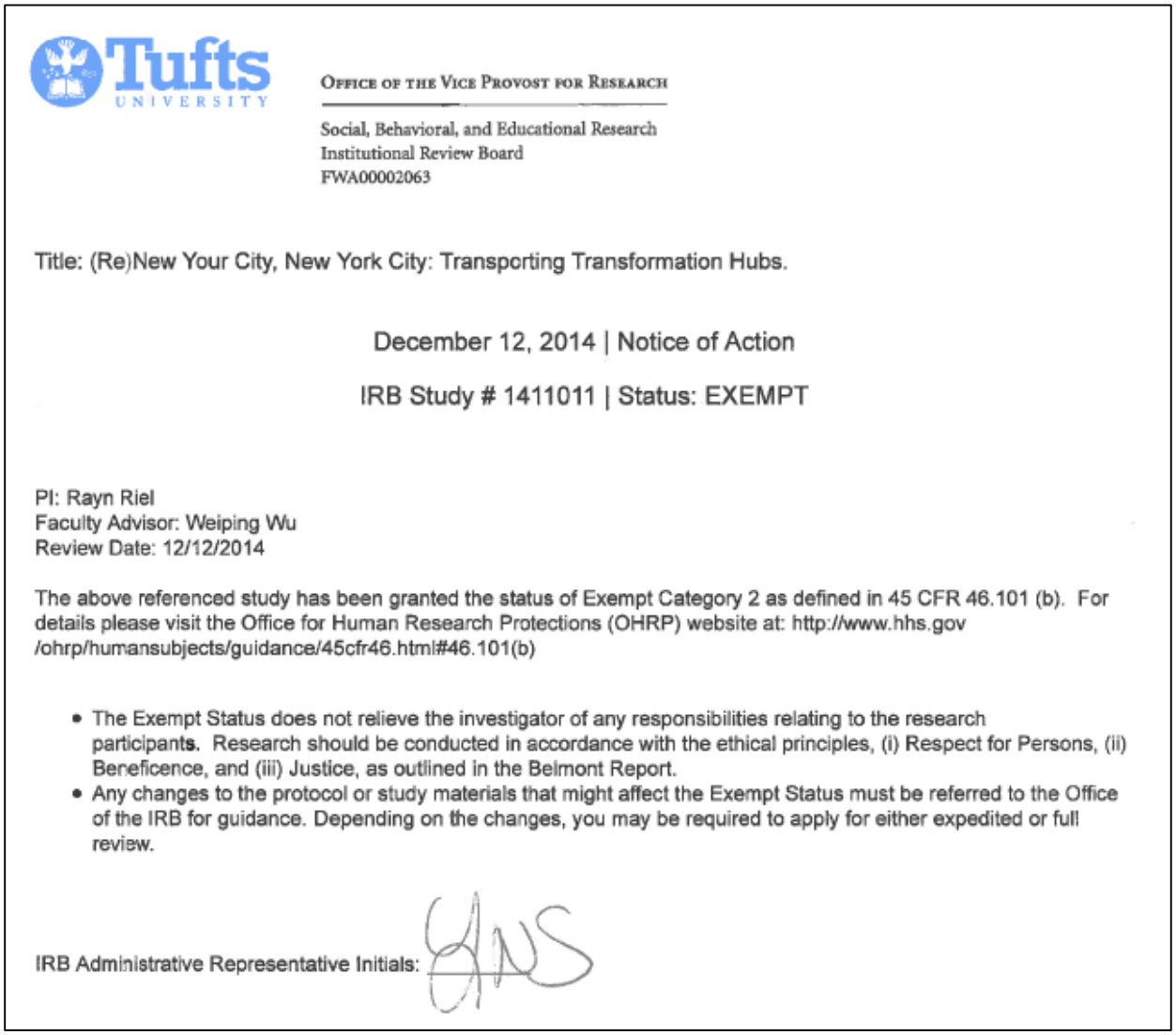
APPENDIX



Tufts UNIVERSITY

OFFICE OF THE VICE PROVOST FOR RESEARCH

Social, Behavioral, and Educational Research
Institutional Review Board
FWA00002063

Title: (Re)New Your City, New York City: Transporting Transformation Hubs.

December 12, 2014 | Notice of Action

IRB Study # 1411011 | Status: EXEMPT

PI: Rayn Riel
Faculty Advisor: Weiping Wu
Review Date: 12/12/2014

The above referenced study has been granted the status of Exempt Category 2 as defined in 45 CFR 46.101 (b). For details please visit the Office for Human Research Protections (OHRP) website at: http://www.hhs.gov /ohrp/humansubjects/guidance/45cfr46.html#46.101(b)

- The Exempt Status does not relieve the investigator of any responsibilities relating to the research participants. Research should be conducted in accordance with the ethical principles, (i) Respect for Persons, (ii) Bereficence, and (iii) Justice, as outlined in the Belmont Report.
- Any changes to the protocol or study materials that might affect the Exempt Status must be referred to the Office of the IRB for guidance. Depending on the changes, you may be required to apply for either expedited or full review.

IRB Administrative Representative Initials:

Figure A1: Institutional Review Board Approval (Tufts University, 2014)

Research Recruitment Message
Undergraduate Senior Honors Thesis

My name is Rayn Riel, and I'm an undergraduate student with comparative and contextual experience in transportation, urban planning, and international development in 30 countries on five continents. Here in Boston, I've designed Tufts' only undergraduate urban-related degree, I've founded Tufts' only undergraduate urban planning student organization, and I've also been working as a GIS Lab Assistant. Born and bred in Brooklyn, I have been interning at the NYC Department of City Planning for the past two summers, and next year, I will be Tufts' first graduate student enrolled in the Urban and Environmental Policy and Planning (UEP) Combined Degree Program.

I'm conducting my Senior Honors Thesis research on the New York MTA's value capture and joint development real estate policies. I'm particularly interested in the Fulton Center, Grand Central Terminal, the Atlantic Yards, and Hudson Yards. I have been collecting data on real estate revenue for these four sites, and I know that the MTA owns plenty of additional valuable real estate assets which are in the process of being sold, leased, and/or renovated.

My central research question is two-pronged: What 'organizational barriers' may prevent the MTA from capturing further revenue from real estate assets? Moreover, how could these 'organizational barriers' be overcome in order to promote joint development at the MTA, and/or in order to develop value capture mechanisms in coordination with the City of New York? Indeed, how can we create not just transportation hubs, but transformation hubs? Born and bred in Brooklyn, I know that New York depends on the MTA, and I'd hate to see the MTA losing out on revenue that could assist in operations and in funding the 2015-2019 Capital Plan.

Although I'm only a student, I hope that my research may be beneficial for our city, state, and region. If you'd be willing to sit down for a quick informational interview, I'd be sincerely honored by your time and expertise! Alternatively, feel free to chat with me on the phone or via e-mail if these options are more convenient for you. I am providing a list of potential questions in my proposal document.

I have a consent form approved by my school's Institutional Review Board, which I am attaching with this message. The consent form must be signed prior to an interview. If we are meeting, this can be done at that time; if we are talking over the phone or writing over e-mail, then this must be scanned and sent to me prior to our discussion. This form details my research procedures and your signature will allow me to cite your expertise in my research. Of course, there is also an option to remain anonymous, and if you choose to remain confidential, this will be honored and secured.

Please feel free to let me know if you have any questions, comments, or concerns about this research. Thank you again so much for your time, and I look forward to hearing back from you!

All the best,
Rayn Riel
347-866-0796

Faculty Advisor: Weiping Wu (Weiping.Wu@Tufts.edu or 617-627-3394)
Institutional Review Board: SBER@tufts.edu or 617-627-3417

(RE)New Your City, New York City: Transporting Transformation Hubs

Figure A2: Sample Research Recruitment Document for IRB

Consent to Participate in Research
Undergraduate Senior Honors Thesis

Principal Investigator: Rayn Riel (Rayn.Riel@Tufts.edu or 347-866-0796)
Faculty Advisor: Weiping Wu (Weiping.Wu@Tufts.edu or 617-627-3394)
Institutional Review Board: SBER@Tufts.edu or 617-627-3417

PURPOSE: New York's Metropolitan Transportation Authority (MTA) is constantly running trains, but it is also constantly running a deficit. Unlike profitable transportation companies, such as the Hong Kong MTR, the MTA has few valuable real estate assets which could be adequately transformed into transit-oriented joint development hubs. Akin to other U.S. public transportation agencies, space for pragmatic and profitable commercial activities – including shops and offices operating on agency-owned land – is limited to a few select stations, yards, concourses, and passageways. However, while the MTA's ability to remain revenue-positive or self-sufficient through real estate development is impossible, the MTA has been capitalizing upon its few existing assets for additional revenue. But this process, along with coordination with the City of New York in order to develop a value capture mechanism, is lengthy and cumbersome. The MTA does not have the resources needed to develop property. This Senior Honors Thesis will elucidate how the MTA can overcome organizational barriers in order to 'transport' the MTA's limited portfolio of assets into 'transformation hubs', and in order to advocate for a privatized, profitable, and independent real estate development division of the MTA. While there is 'room' for improvement, institutional barriers ranging from NIMBYism and a fear of density to antiquated zoning laws, financing requirements, and a lack of communication between the City, State, MTA, and developers would need to be transcended through coordinated reformation efforts.

PROCEDURE: Prior to an informational interview, I will attach my proposal and research questions via my recruitment e-mail message, which also includes this consent form. If these questions cannot be answered due to a conflict of interest, please feel free to rescind your availability for an interview, or only discuss answerable questions. You may also wish to be confidential by only being identified by your business name (i.e., "MTA employee"). The interview will be an informal, informational interview, and will generally last for 30 minutes.

BENEFITS: There is no compensation for this interview, even though your comments may be publicized by Rayn Riel and/or Tufts University. Hopefully, the Metropolitan Transportation Authority will be able to appreciate an outsider's perspective, tackling institutional challenges and exploring value capture mechanisms and potential joint development opportunities.

CONFIDENTIALITY: Only your name, business name, and occupation title will be identified, in order to add to the credibility of this research. If you wish to remain anonymous, you can do so by providing initials under the "ANONYMITY" section below the "AGREEMENT" section. Anonymous subjects will absolutely never have their name or occupation title written down in research documents. However, the business name will still be written down. For instance, anonymous subjects employed by the MTA will be described only as an "MTA employee", without name and occupation title.

AGREEMENT: By signing this consent form, you agree to be interviewed and you agree to the "PURPOSE", "PROCEDURE", "BENEFITS", and "CONFIDENTIALITY" information above. Furthermore, you also agree to have your identification information published as part of this research project, potentially including some direct quotations from the interview. The interview will not be conducted until this form has been signed by the interviewee. If meeting together, this can be done prior to the interview; if discussing via phone or writing via e-mail, this must first be scanned and returned.

_____ _____
Signature Date

_____
Name (Print)

ANONYMITY: If you wish to remain anonymous, please provide your initials here: ☐

(RE)New Your City, New York City: Transporting Transformation Hubs

Figure A3: Consent to Participate in Research for IRB

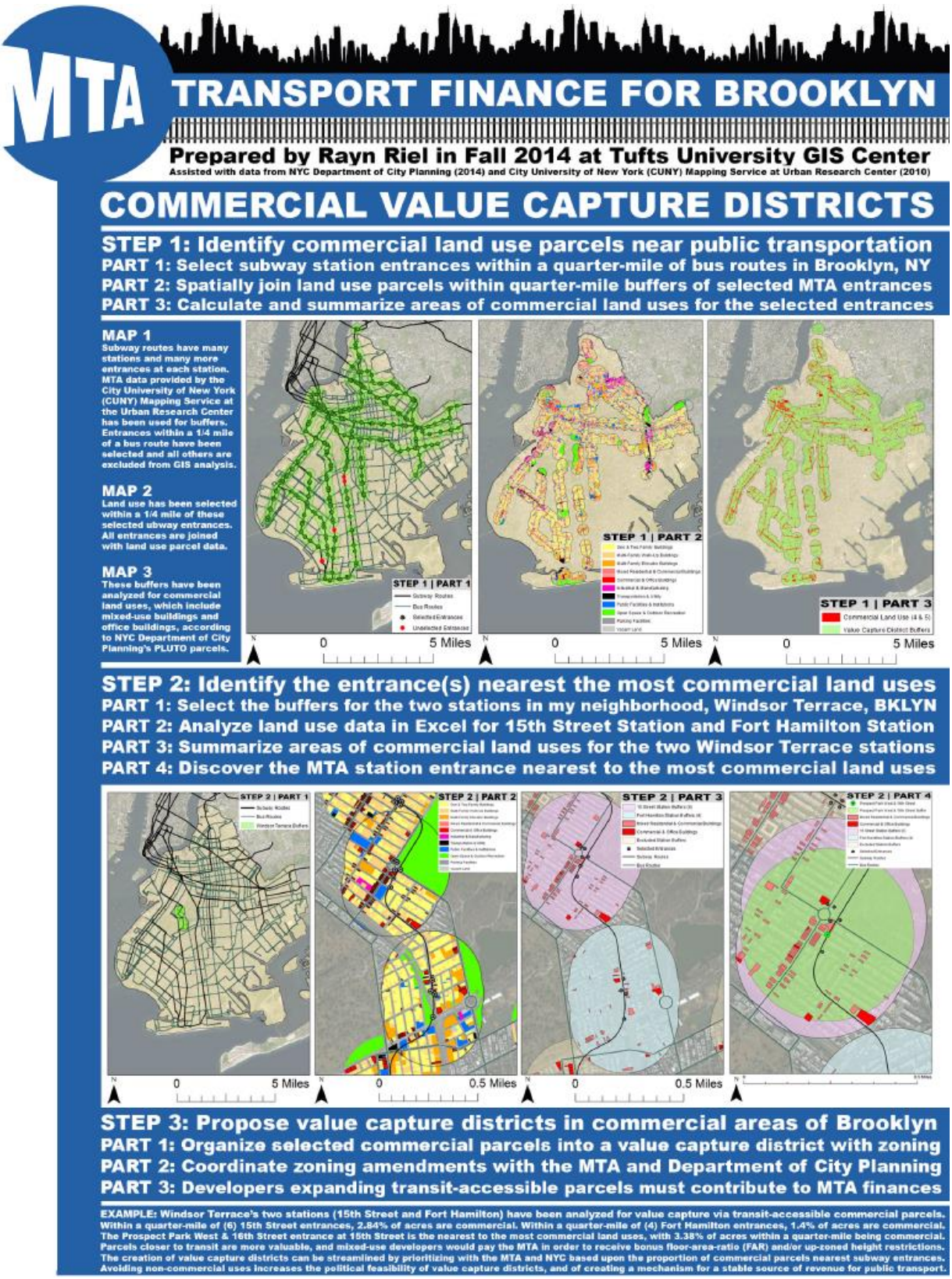


Figure A4: GIS Value Capture Mechanism (Riel, 2014)