Equitable Access to Public Transport: Corridor Plans for Transit-Oriented Development in Soweto, South Africa and Boston, Massachusetts Compared

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EQUITABLE ACCESS TO PUBLIC TRANSPORT: CORRIDOR PLANS FOR TRANSIT-ORIENTED DEVELOPMENT IN SOWETO, SOUTH AFRICA AND BOSTON, MASSACHUSETTS COMPAARED

Janice C. Griffith*

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ABSTRACT

The article argues that municipalities should play a major role in ensuring equitable access to public transportation and in planning for transit-oriented development. It presents two case studies that illustrate the importance of these undertakings. In South Africa, apartheid spatial and racial segregation resulted in the exclusion of non-white residents from the urban core where the economy was centered. These residents, who were forced to live in a city’s outlying areas, experienced considerable difficulty in commuting to the workplace. To address the lack of transportation equity, the City of Johannesburg, with support from the national and provincial governments, embarked on the construction of transit arterial connections to link apartheid-isolated areas to other parts of the City. In 2009, the City began operating a bus rapid transit system to connect Soweto, an apartheid-affected township within Johannesburg, to its Central Business District. In Boston, Massachusetts, the Fairmount Indigo rail line, running from South Station to Readville, in the Hyde Park area of Boston, has been reactivated to provide equitable access to public transportation in areas racially segregated and in need of revitalization.

The equitable new modes of transport in Johannesburg and Boston provide an opportunity for economic development in the areas surrounding the transit routes. Accordingly, both cities created transit corridors with the expectation that communities within them can be transformed through public improvements and private investment. The article compares the transit-oriented development plans of each city and highlights some of the impediments to effectuating transit-oriented development. The legal context in which the plans have been made is compared as well. The benefits of transit-oriented development are discussed including improvements to the environment that result from a decrease in traffic congestion...
and air pollution as commuters switch to public transit from the use of motor vehicles. The article presents views on the role cities and metropolitan governments should play in the planning and implementation of transit-oriented development corridors.

**KEY WORDS:** equity, public transit, transit-oriented development, bus rapid transit, spatial segregation, racial segregation, cities, urban, transportation, corridors, mobility

**INTRODUCTION**

Two localities in two different continents, one in Soweto, South Africa and the other along the Fairmount Indigo rail corridor in Boston, Massachusetts, share a history of racial discrimination and disinvestment that has left their residents spatially segregated without ready access to workplaces. Soweto, which stands for Southwestern Townships, is located in the City of Johannesburg. Boston’s Fairmount Indigo rail corridor traverses communities in the Roxbury, Dorchester, Mattapan, and Hyde Park areas of Boston.

In South Africa, apartheid spatial and racial segregation resulted in the exclusion of black and colored populations from business centers and traditional white areas. Apartheid was accompanied by the forcible removal of non-white people from inner cities and their relocation to urban fringes, away from the economic opportunities present in the central city. Soweto, for example, lies fifteen kilometers southwest of Johannesburg’s central business district. In the United States, white flight from central cities and suburban development after World War II left racial minorities and lower-income households in the inner city without ready access to the new jobs created by economic development on a suburban and metropolitan scale outside of the urban core.

As South Africa began transforming into a post-apartheid society, it prioritized strategic interventions to reverse the legacy of spatial segregation. Public transit plays an important role in thwarting the effects of spatial and residential segregation by enabling underserved populations to reach employment centers and gain access to all parts of a city. The concept of transportation equity or equitable transport should influence decision makers to make transportation investments so as to benefit all community groups irrespective of race, class, or income. Such investments are particularly important to reverse past discriminatory activity that has left underserved groups without access to reliable public transport, thereby cutting them off from the mobility necessary to improve their lives.
Enhanced mobility is key to greater connectivity among diverse groups of people living within a metropolitan area. A public transport network should function “as a great equalizer and leveler: you can sit next to anyone.”

Residents in both Soweto and the Fairmount Indigo Corridor have suffered from a lack of access to public transport. Efforts are now underway to reverse this inequity through the development of well-planned transit arteries to connect these marginalized areas to central business districts so as to open up greater job opportunities. In Johannesburg these transit lines have been dubbed “Corridors of Freedom” because they will help transform entrenched settlement patterns by increasing freedom of movement within the City. The Corridors of Freedom are envisaged as creating a life changing experience for the average Joburger:

Gone will be the days of being forced to rise at dawn to catch a train, bus or taxi to a place of work. Gone will be the days of returning to your home late in the evening, unable to share a family meal together or spending quality time with your spouse and children.

The Corridors of Freedom will usher a new era of access to opportunity and a choice for residents to work, stay and play within the same space without the inconvenience and high costs of travelling over long distances every day.

This article presents two case studies of national, state, and local initiatives to improve transportation equity. Proponents of the Corridors of Freedom in Johannesburg aim to stitch the city together through transit-oriented development. A bus rapid transit system has been developed to provide connections from Soweto to Johannesburg’s central bus district with feeder bus extensions into other parts of Soweto. In Boston, the Fairmount Indigo rail corridor has been reactivated to create new transit opportunities. Advocates for this corridor regeneration seek to establish new links between neighborhoods, spur the revitalization of commercial districts, and create a sense of place that celebrates local culture yet transcends neighborhood boundary lines.

The article compares the plans that have been made for the development of transit corridors in Soweto and Boston to facilitate both the delivery of transportation services and the redevelopment of the areas along the corridors for residential and commercial use. The article first provides background information in Part I about these two communities and includes discussion of the corridors’ origins. The article in Part II points out that a movement for equitable transportation solutions lies behind both corridors. Equity, however, has been combined with the desire to turn the corridors into engines of economic growth that will improve the lives of corridor residents. Transit-oriented development (“TOD”) is the planning tool selected in both cases to achieve this economic growth. The
article discusses the benefits of TOD as well as some of the impediments to its successful implementation. TOD is praised as more than a means to boost economic output—it has a larger purpose of improving the environment by decreasing the need for motor vehicle use. As a result, fossil fuel consumption and air pollution decline.13 In Part III, the article makes recommendations as to the divergent roles municipalities should assume to expedite the successful pursuit of TOD. In Part IV, the article analyzes and compares the plans that have been made by both cities to facilitate corridor transit development. Further, it sets forth the legal context in which these plans were made.

I. SOWETO, SOUTH AFRICA AND THE FAIRMOUNT INDIGO CORRIDOR IN BOSTON, MASSACHUSETTS

A. HISTORICAL DEVELOPMENTS

1. SOWETO

As the largest township in South Africa, Soweto has been described as a “city within a city”.14 Forty-three percent of the City of Johannesburg’s population resides in Soweto, and Soweto’s area of approximately 150 km² constitutes more than nine percent of the City’s territory.15 Soweto’s population of approximately 1.3 million has a youthful core, with more than forty-five percent below the age of twenty-five.16 Soweto’s predominantly black residents and an emerging dynamic population have combined to create a diverse and dynamic community that draws hundreds of thousands of tourists, many of whom are attracted by Soweto’s history of struggles.17

Soweto began as a temporary relocation site for African mine workers who were forcibly removed from their living quarters in an area known as Brickfields after a break-out of bubonic plague occurred in Johannesburg in 1904.18 Soweto “developed gradually out of a collage of African townships established by colonial and Apartheid governments over a period of more than five decades.”19 Because Soweto was created to shelter transitory migrant workers, it never developed an economic base of its own.20 Although remarkable progress has been made in Soweto in the last fifteen years towards building the type of public infrastructure needed to ensure economic growth and a higher standard of living, almost seventy percent of its residents are employed in other parts of Johannesburg, making their commutes often long and onerous.21 Private investment in the form of retail, office, transport, and small-scale manufacturing are slowly leading to a more robust Soweto local economy.22 The township, however, has a forty percent unemployment rate, and thirty percent of its households have been described as living in abject poverty.23
In the 1990s, institutional transformations leading to a single-tier metropolitan governance structure for Johannesburg preceded national and local capital investment that began to reshape parts of Soweto from 2000 to 2011. The first mayor of the City of Johannesburg, Executive Mayor Amos Masondo, prioritized the development of Soweto and a large portion of the City’s capital budget was invested in Soweto between 2001 and 2011. The National Treasury and the provincial government of the Gauteng Province, in which Johannesburg lies, also provided support. The hosting of major international events in Johannesburg further served as a catalyst for the improvement of Soweto; these included the World Summit on Sustainable Development in 2002 and the 2010 Fédération Internationale de Football Association (“FIFA”) World Cup. Preparation for the latter event led to the development of a new public transit system, of which Bus Rapid Transit (“BRT”), called Rea Vaya (“we are moving”), emerged as the flagship. Funding from the National Treasury through the Public Transport and Infrastructure Systems Grant program, which provides support to municipalities for the construction of public transportation infrastructure, is also viewed as a critical factor in Johannesburg’s ability to implement the BRT. Soweto’s residents were major beneficiaries of the BRT construction. All of these concerted efforts helped to make Soweto a symbol of the New South Africa.

2. FAIRMOUNT INDIGO CORRIDOR

The Fairmount Line opened in 1855 as one of the first passenger railroads serving residents in the growing communities surrounding Boston. Due to low ridership the line was downgraded to moving freight in the early 1900s. Disinvestment following racial changes in Boston neighborhoods and the movement of residents out of Boston to surrounding suburbs following World War II further hampered the resumption of passenger service. In 1979, the Massachusetts Bay Transportation Authority, which operates a Massachusetts mass transit system serving Boston, (“MBTA”) restored service at two stations to reroute commuter trains while the Southwest Corridor Orange Line was undergoing reconstruction. Service remained limited, however, and the predominantly African American, Latino, Caribbean, and Cape Verdean immigrant residents living along the 9.2 mile Fairmount Line had to rely on bus rides with transfers to reach needed destinations. Running through a swath of neighborhoods between the Red Line and Orange Line of the MBTA’s subway network, the Fairmount Indigo Corridor has historically been marked by the lack of rail infrastructure. In the late 1990s, the lack of access to rapid transit in these communities despite the existence of the Fairmount Line began to capture attention.

In 2000, a coalition in support of transit equity was launched to analyze the feasibility of creating better public transit options by adding new stations along the Fairmount Line. The study recommended that four new stations be added to the
Line, and in 2005 the Commonwealth of Massachusetts made a commitment to finance these stations. Fares at the stations were lowered to equal MBTA rapid transit fares, thereby providing additional transit equity.

Recognizing the potential for economic growth around the stations along the Fairmount Line, the City of Boston launched the Fairmount Indigo Planning Initiative in February 2012 to focus such growth and to incorporate adjacent community needs. The planning initiative, a community based and corridor-wide planning process, involves both community participants, including community partners and consultants, and the City’s Team, led by the Boston Redevelopment Authority. The planning process hopes to achieve a shared vision and coordinated strategies “to unlock greater potential for each of the station areas and neighborhoods than would exist for each area acting in isolation.” The initiative, which prioritizes economic prosperity for the Corridor’s existing residents and businesses, focuses upon physical and economic development, sustainable growth, and transit-oriented development (“TOD”).

Approximately 93,104 people live within one-half mile of the Corridor’s rail stations excluding South Station; an additional 10,322 people are estimated to live within South Station’s one-half mile catchment area. Compared to residents in the City of Boston as a whole, residents in these neighborhoods, which include portions of Dorchester, Roxbury, Hyde Park, and Mattapan, have a higher poverty level, a higher unemployment rate, and less educational attainment. The annual household income of almost half of the Corridor’s residents is less than $40,000. The Corridor generates fewer than 25,000 jobs in contrast to about 650,000 jobs available to the Boston labor force. Fifty-six percent of the Corridor’s residents have attained only a high school education whereas thirty-nine percent of Boston’s population as a whole fit into this category. Jobs in educational services and construction have a higher concentration in the Corridor than in Boston as a whole. Health care, finance and insurance, and higher education, which comprise three large industries in Boston, are not represented well in the Corridor.

B. TRANSPORTATION INFRASTRUCTURE: CORRIDORS OF FREEDOM AND THE FAIRMOUNT INDIGO RAIL LINE

The Fairmount Indigo Corridor, traversing several densely populated urban neighborhoods, runs for 9.2 miles in a north-south direction from South Station, a major rail hub in downtown Boston, to Readville, in Hyde Park. In addition to South Station, the Corridor includes the following rail stations: Newmarket, Upham’s Corner, Four Corners/Geneva Avenue, Talbot Avenue, Fairmount, and Readville. Sixteen crosstown MBTA bus routes also serve the Corridor. Prior to the Fairmount Indigo Corridor Initiative, trains did not make frequent stops along the line and a high fare structure existed.
The Rea Vaya Bus Rapid Transit system, which provides transport along the Corridors of Freedom, has been operating in Johannesburg since 2009.\(^{57}\) Following South American BRT models, the buses run on dedicated lanes with off-board fare collection that facilitates the transport of a high volume of passengers.\(^ {58}\) Enclosed median stations, fitted with electronic sliding doors for vehicle entrance and exit, are equipped to control passenger exit and entry.\(^ {59}\) Making the station platform at the same height as the bus floor facilitates passenger boarding as does the multiple doors on the buses.\(^ {60}\)

In Johannesburg, the Corridors of Freedom have been planned for five transit arteries with two additional lines proposed for completion by 2040.\(^ {61}\) Strategic Area Frameworks have been developed for the Empire Perth Development Corridor, the Louis Botha Development Corridor, and the Turffontein Development Corridor. The Empire Perth Corridor runs west from Johannesburg’s Central Business District to Soweto on the southwest periphery of Johannesburg.\(^ {62}\) The Louis Botha Corridor lies to the north of the Central Business District and connects it with Alexandra Township and Sandton.\(^ {63}\) The Corridor thus provides connections to the Central Business District from Alexandra and Soweto, which have been described as “two of the most significant settlements affected by apartheid in Johannesburg.”\(^ {64}\) The Turffontein Corridor, situated south of the City’s Central Business District, consists of a mining and industrial belt that separates lower density residential areas, including Turffontein, from the inner City.\(^ {65}\) Turffontein was designated a corridor due to its proximity to the City and its local and regional accessibility, which can link poorer areas to economic opportunities.\(^ {66}\) This article will focus on the Empire Perth Development Corridor.

**C. BUILDING TRANSIT CORRIDOR INFRASTRUCTURE: JOHANNESBURG’S BRT COMPARED TO BOSTON’S FAIRMOUNT INDIGO RAIL LINE**

Some distinct infrastructure differences exist between the Fairmount Indigo Corridor and the Corridors of Freedom. The Fairmount Indigo Corridor constitutes just one rail line of a mass transportation facilities system operated by the Metropolitan Bay Transportation Authority, a political subdivision of the Commonwealth of Massachusetts.\(^ {67}\) The Fairmount Rail Line was already in place; in effect, it only had to be re-activated and expanded with new stations. Although Fairmont Indigo is a rail corridor, bus routes connect to the rail stations along the line. The Corridors of Freedom launched an entirely new public transit system, Rea Vaya being the first bus rapid transit system in Africa.\(^ {68}\) Prior to its advent, public transport was provided by uncoordinated operators, a so-called informal type of public transport.\(^ {69}\) Both private and public transport continue along the Empire Perth Corridor, and plans are underway for high speed Metrorail services.\(^ {70}\)

Bringing reliable public transit to both communities took considerable effort. In Boston, a Fairmount/Indigo Line Coalition, which included four
community development corporations and other civic associations, mustered support for the initiative. In Johannesburg, the idea of a formal bus service met with opposition from the taxi minibus system. Prior to the implementation of Phase 1 of the BRT numerous negotiations took place with the taxi industry, which resulted in compensation paid to various stakeholders.

II. FORCES DRIVING THE CREATION OF TRANSIT CORRIDORS

A. EQUITY

The origin of both the Corridors of Freedom and the Fairmount Indigo Corridor can be traced to a movement for equity. Both transit corridors stem from a desire for inclusion in which all can participate and prosper. Although an equitable society includes more than transit equity, the latter is a necessary step towards empowering underserved populations to reach a platform that will provide adequate health care, education, housing, a sustainable environment, and employment opportunities. The search for equity would seem to flow naturally as a top priority in post-apartheid South Africa. In the United States, the history of slavery, the constant arrival of new immigrants, and the forces of globalization have caused equitable issues to be an ever present line of discourse and decision making.

The quest for equitable treatment, however, in both Soweto and Boston, did not stop with access to transit. Public officials and community leaders saw the potential for economic development along the corridors. This goal has been particularly predominant in the planning of the Fairmount Indigo Corridor. Certainly, the possibility of transit-oriented development helped to strengthen support for infrastructure investments in the Fairmount Line. Combining transit equity with economic development, however, presents a number of challenges. Those in charge of providing transportation can be expected to prioritize the operation and efficiency of the transportation systems for which they are responsible. Their specialty usually does not lie in overseeing the economic development of areas surrounding trains stations. Thus, transit-oriented development to be successful requires some type of partnership among two vastly different sectors: the transportation industry and real estate developers. The pursuit of successful transit-oriented development continues to evolve in the United States and will be a major issue throughout the twenty-first century.

1. EQUITY AS A GOAL OF METROPOLITAN AND REGIONAL TRANSPORTATION PLANNING IN THE UNITED STATES

Although the United States has been less strategic than South Africa in ensuring mobility for underserved people, it recognizes mobility as a key factor in transportation planning. Since the 1960s the federal government of the United States
States has conditioned the receipt of federal transportation funding upon the development of metropolitan region-wide plans that involve intergovernmental collaboration and oversight by a metropolitan planning organization.76 The United States Congress has mandated ten factors to guide the metropolitan planning process for a metropolitan planning area.77 Of those listed, one factor requires a determination of whether the project or strategy will “increase the accessibility and mobility of people . . .”78

In the United States, metropolitan transportation planning agencies now highlight the importance of transportation plans that treat all communities equitably. The 2016-2040 Columbus Area Metropolitan Transportation Plan prepared by the Mid-Ohio Regional Planning Commission, for example, includes a goal to make investments that “benefit the health, safety, and welfare of people.”79 One objective in pursuit of this goal seeks to “[m]inimize the difference in trip travel times for disadvantaged populations relative to the regional trip travel time.”80 Pursuant to its goal to achieve sustainable neighborhoods, this metropolitan planning organization has targeted the development of transit and bikeways infrastructure to serve more people.81 The plan seeks to reduce per capita energy consumption by increasing greater use of transit, bicycles, and walking as alternative modes of transportation for commuters.82

2. EXAMPLES OF TRANSIT IMPROVEMENT PROGRAMS IN THE UNITED STATES THAT PRIORITIZE EQUITY

The Atlanta BeltLine in Atlanta, Georgia closely aligns with objectives served by the Corridors of Freedom and the Fairmount Indigo Corridor. Here, ambitious plans have been made to redevelop lands surrounding an abandoned railway, which forms a loop around the City’s urban core.83 The railway will be replaced by the construction of transportation infrastructure that includes streetcar and light-rail transit along the 22-mile BeltLine corridor.84 The BeltLine traverses both upscale and disadvantaged areas, and the promotion of geographic equity constitutes a central thesis of the BeltLine Strategic Implementation Plan.85 The prioritization criteria for the assessment of future BeltLine parks, trails, and transit projects all include equity as one of five evaluative criteria.86 The Plan further places priority on constructing new parks over refurbishing existing parks in order to deliver recreational space to areas that have had limited access to greenspaces in the past.87

In Minnesota, the Twin Cities Metropolitan Council (“Met Council”), a metropolitan-wide regional planning body, has identified equity as one of the five key regional outcomes projected to be achieved under its Thrive 2040 comprehensive development plan.88 The plan describes equity as connecting residents to opportunity and creating “viable housing, transportation, and recreation options for people of all races, ethnicities, incomes, and abilities so that all
According to this Met Council plan, equity should be promoted by equitable investment decisions, full cross-section engagement of the community in decision making, a mix of housing affordability as part of the region’s transit corridors, and the provision of real choices as to where all residents can live and travel irrespective of “race, ethnicity, economic means, and ability.” Met Council completed an equity assessment report of the Twin Cities region in 2014 to fulfill requirements for a federal Sustainable Communities Regional Planning grant.

Through its Corridors of Opportunity (“CoO”) initiative Met Council established a new framework to encourage more integrated planning and to increase the involvement of historically under-represented communities in transit corridor planning. By undertaking greater cross-sector, cross-jurisdictional planning and elevating it to a regional level, the initiative achieved better outcomes and more equitable benefits for lower-income communities. Vision was broadened from an individual parcel to a corridor-wide concept, and this integration has led planners to consider a full mix of land uses. The new patterns of community engagement now bring a diverse group of stakeholders, including community organizations, into the planning process early, and their involvement helps implement transit plans as well as spread the word about them.

B. TRANSIT-ORIENTED DEVELOPMENT

1. TRANSIT-ORIENTED DEVELOPMENT ELEMENTS AND GOALS

In addition to increasing transit equity, both the Corridors of Freedom and the Fairmount Indigo Corridor have been planned for transit-oriented development. Such development has been defined as that “located within a quarter- to half-mile radius of a transit station that offers a mix of housing, employment, shopping, and transportation choices within a neighborhood or business district.” Underlying TOD is the belief that growth should be organized on a regional level to be compact and supportive of transit. It is a regional planning strategy to foster mixed land uses, both commercial and residential, around public transportation facilities. By making public transport more accessible, TOD enables people to forego the more expensive cost of driving motor vehicles while giving them access to jobs on a regional basis. Promoters of TOD argue that by providing alternative means of transportation, it reduces automobile dependency and thus lessens traffic congestion and air pollution.

The integration of transport and land development are central to TOD processes. To make mass transit feasible, a sufficient number of transit users must be using the transit system. If the area surrounding a transit station has been zoned or developed for low population density, a sufficient number of users will not exist to make the public transit viable. Thus, TOD involves more densely
populated development in close proximity. The more compact development, however, necessitates the inclusion of other elements to ensure residents enjoy a quality of life environment. To be effective, transit-oriented development must include the type of amenities that will attract residents to live within such compact urban corridors. Thus, creating the opportunity for public open space, recreational space, parks, and connected greenways not only promotes sustainability goals, but enhances the quality of life enjoyed by TOD residents. Well-designed public open space is also viewed as a powerful catalyst to attract and maintain private investment.102

Transit-oriented development along corridors shares some key elements. First, TOD results in short-distance travel to a transit system, thereby promoting transit equity. TOD’s mixed-use character is designed to give residents easy access to shops, restaurants, and other amenities, thereby reducing the amount of vehicular travel residents would otherwise have to undertake. Further, TOD seeks to maximize economic opportunities along a transit corridor and particularly near stations. Both Johannesburg and Boston place prime importance upon the goal of revitalizing the economy in these underdeveloped areas.103 Because transit lines generally enhance the value of land surrounding them, the concept of recapturing some of this value through transit-oriented development has long been recognized.

Sustainability goals constitute an important feature of TODs. Sometimes referred to as “smart growth,” TOD developments incorporate green space and infrastructure to make it easier for people to reduce reliance upon motor vehicles by using alternative modes of transit, including the use of mass transit, walking, or bicycling.104 This so-called smart growth reduces carbon dioxide emissions and results in a more sustainable environment.105

All of the above elements have long been identified as the benefits of transit-oriented development. TOD makes it easier for people who work or live near a station to travel around the region.106 By reducing the number of road trips that would need to take place without TOD, the road network is less impacted, thereby reducing traffic congestion.107 By mixing commercial and residential uses, TOD can enrich streetscapes, improve the quality of life, and enhance the pedestrian realm.108 Walkable neighborhoods with access to transit and close to a variety of stores and services are described as “location efficient.”109 This efficiency particularly benefits lower-income households by decreasing their transportation costs.110 TOD also promotes regional economic prosperity by enabling workers “at all income levels to reach job centers without long, expensive commutes.”111

In summary, the development of transit-oriented corridors serves a number of goals. First and foremost, such corridors bring transit equity to surrounding and often distressed communities by providing access to public transportation. Such access increases employment opportunities to corridor residents by connecting
them with the workplace and reducing commuting times. Transit-oriented development further opens the door for economic development along the corridor, resulting in the creation of economic opportunities that stem from this growth. Vibrant mixed-use urban villages can be created at the stations along the corridor. Because transit-oriented corridors reduce the use of motor vehicles for travel by providing alternative forms of transportation, they reduce air pollution and traffic congestion, thereby creating a more sustainable environment. To encourage people to live in more compact developments along a transit line, amenities such as parks, recreational space, open spaces, and greenways must be made available as part of the overall development. These elements in turn move urban areas along a path that is more environmentally friendly. Finally, affordable housing is an important element of any corridor to ensure that corridor residents are not displaced by the new economic development.

III. ROLE OF LOCAL GOVERNMENT IN ENSURING THE SUCCESS OF TOD

South Africa and the United States possess different constitutional and legal frameworks for the exercise of power by municipalities. The article next discusses the legal structure in which public planning takes place in both countries and points out the resulting differences and similarities in planning for TOD. Because South Africa has adopted a constitution and enacted laws that provide guidelines for metropolitan planning, this national and provincial framework is analyzed as well as the City of Johannesburg’s planning processes for the Corridors of Freedom.

A. CONSTITUTIONAL HOME RULE IN THE REPUBLIC OF SOUTH AFRICA

The Constitution of the Republic of South Africa grants municipalities the right to govern with respect to the “local government affairs of its community,” but such governance is “subject to national and provincial legislation.” National and provincial governments, however, “may not compromise or impede a municipality’s ability or right to exercise its powers or perform its functions.” The Constitution envisions that the national government and the provincial governments work cooperatively with municipalities, placing a duty upon them to “support and strengthen the capacity of municipalities to manage their own affairs, to exercise their powers and to perform their functions.”

An entire chapter of the South African Constitution addresses the subject of “Co-operative Government.” The Constitution establishes three levels of government referring to them as the “national, provincial and local spheres of government.” Each sphere is said to be “distinctive, interdependent and interrelated.” Further, the Constitution mandates that each of the three spheres of government exercise its powers so as to “not encroach on the geographical, functional or institutional integrity of government in another sphere.”
These South African constitutional provisions relating to national, provincial, and municipal governance contrast to those in the United States Constitution in which local governments are not even mentioned. Instead, the states alone create and define the powers of municipalities in the United States. The federal government reigns supreme in areas where the United States Constitution grants it powers, enabling it to preempt state governmental initiatives that touch upon such areas. In turn, state governments, unless restricted by state constitutional provisions, can preempt local governmental activity. The South African Constitution provides, however, that courts should reasonably interpret conflicting national and provincial legislation and constitutional provisions so as to avoid a conflict, as opposed to making alternative interpretations that result in the finding of a conflict.  

Should a new constitution for a republican form of government be in the making, the South African constitutional provisions provide an admirable model because they recognize the importance of governance at the local level and place a duty upon the different levels of government to work cooperatively. Even though cooperation may not always be achieved to the satisfaction of the public or contesting governmental entities, the South African constitutional mandate for intergovernmental cooperation may encourage the sharing of power in situations where it can be beneficial.

Among the several values upon which South Africa’s Constitution is founded, human dignity, equality achievement, and the advancement of human rights receive first mention, followed by “non-racialism and non-sexism.” Clearly the Constitution was written to address issues caused by past racial segregation, and explicit reference to this history is made in several provisions. The Constitution specifically envisions that legislative action will be taken to redress the effects of past racial discrimination. Given this constitutional context, one would expect that transportation equity to redress past spatial segregation policies would constitute a goal of all three spheres of government. In fact, such is the case.

B. NATIONAL PLANNING REQUIREMENTS IN THE REPUBLIC OF SOUTH AFRICA

The Municipal Systems Act 32 of 2000 directs South African municipalities to work with other organs of government to realize the fundamental rights set forth in the South African Constitution, including efforts aimed at redressing the results of racial discrimination. The Act provides that municipal planning must comport with national and provincial planning requirements, but consultation with local governments must occur prior to the enactment of such planning requirements. Pursuant to the Act, each South African municipality must adopt an integrated development plan that is compatible with the plans and planning requirements of
the national and provincial governments. Such integrated development plans must be designed to develop a municipality comprehensively by aligning development proposals with the available municipal resources to implement them. Thus, integrated development in South Africa is coordinated on a national, provincial, and municipal level. In contrast, the federal government in the United States does not prescribe development plan principles for local development although under its spending power, it may condition the receipt of federal monies upon compliance with certain terms and conditions.

C. SOUTH AFRICA’S SPATIAL PLANNING AND LAND USE MANAGEMENT ACT

Because spatial planning in South Africa constitutes a national concern and priority, national legislation establishes a framework for its implementation. The Preamble of the Spatial Planning and Land Use Management Act 16 of 2013 states that South African people continue to live in places defined by past spatial planning, laws, and practices that were based on segregation, racial inequality, and unsustainable settlement patterns. Noting the absence of spatial planning legislation in some urban and rural areas and the poor integration of some land use management processes into formal systems of spatial planning, this Preamble declares that it is necessary to establish throughout the country a comprehensive system of spatial planning and management of land uses.

Following the Preamble, the Spatial Planning and Land Use Management Act next proceeds to spell out the components of a spatial planning system and the elements of planning for each governmental sphere. National planning includes measures to monitor and support planning undertaken by the provincial and municipal spheres of government, and the provinces are charged with monitoring compliance with the Act by municipalities. Chapter 2 of the Act establishes five development principles, namely spatial justice, spatial sustainability, efficiency, spatial resilience, and good administration. Among the norms and standards set forth in the Act, one calls for the promotion of “social inclusion, spatial equity, desirable settlement patterns, rural revitalisation, urban regeneration and sustainable development.” Other chapters of the Act cover intergovernmental support, the preparation and content of spatial development frameworks at the various governmental levels, and the legal status of a spatial development framework.

The Spatial Planning and Land Use Management Act further requires municipalities to adopt a “single land use scheme” that must “include appropriate categories of land use zoning and regulations for the entire municipal area” as well as promote economic growth, social inclusion, and sustainable and efficient land development. In addition, the Act authorizes the establishment of municipal planning tribunals and spells out their duties and processes. Thus, land use
regulation resides at the municipal sphere of government. Schedule 1 of the Act, however, provides that certain development and land use matters are subject to provincial legislation, including the prescription of a uniform set of land use zones, provisions for the review of municipal land use schemes, and various procedures applicable to municipal land use regulation. Schedule 2 of the Act provides a list of land use purposes, including definitions of such purposes.

D. LEGAL CONTEXT FOR PLANNING IN THE UNITED STATES AND BOSTON

In the United States, the states generally devolve land use planning powers to localities although some states have developed statewide guidance principles for comprehensive planning. The State of Oregon instituted one of the more extensive state-directed planning systems that requires municipalities to meet established statewide planning goals. A Land Conservation and Development Commission, a state agency, oversees compliance by local governments with the state-determined planning goals.

In Boston, planning and zoning functions fall under the jurisdiction of the Boston Redevelopment Authority, now called the Boston Planning and Development Agency, an independent body politic and corporate. This public authority is governed by five members, one of whom is appointed by the Governor and four of whom are appointed by Boston’s mayor. Because the Boston Redevelopment Authority has been granted control over economic development as well as planning and zoning, it wields more power than the typical United States municipal planning body. As a separate public entity with self-funding projects, it operates without direct oversight from a state governmental entity. It has been described as only accountable to Boston’s mayor. Thus, the Fairmount Indigo planning initiative proceeds at the local level of governance without the necessity to comply with planning principles promulgated by the Commonwealth of Massachusetts or the United States federal government.

E. ROLE OF LOCAL GOVERNMENTS IN PLANNING AND IMPLEMENTING TOD CORRIDORS

Local governments play a crucial role in the planning and implementation of transit-oriented corridors. First, transit-oriented development requires more planning than a typical development not connected to a rail or bus rapid transit corridor. TOD necessitates “long-term strategic planning at multiple scales—regional, corridors, and station areas,” and “[l]ong-range plans . . . must be supplemented by specific instruments and policy levers that pave the way to implementation.” The mode of transportation must appeal to enough riders to make the transit system viable, and the development has to be coordinated in a way that will attract both business and residential uses to the main streets near the stations. Further, spatial planning must be linked to infrastructure development in
order for transit corridors to succeed.\textsuperscript{147} If the corridor serves more than one municipality, regional plans must be put in place to ensure coordination.

Second, local governments must engage the neighborhoods served by the transit corridor. Residents must view the corridor as their place. Active participation in the planning process by residents of the communities served by transit-oriented development helps develop their attachment to it as a shared community place. When people take ownership of a TOD station or location, they are more likely to use the transit provided or spend time in the TOD area whether for shopping or leisure activities. Without commitment from the community, TOD will not succeed because ridership will not be robust and businesses will not draw clients or customers from nearby neighborhoods.

Third, the local government must spearhead the integration of land uses with transportation.\textsuperscript{148} In the United States, locally controlled, and sometimes overly restrictive, land use regulations can prevent the creation of sufficient densities to support TOD. In contrast to this local control, metropolitan-wide or state agencies have been granted major responsibility for transportation decision making in the United States.\textsuperscript{149} The interconnectivity of transportation routes across municipal boundary lines frequently results in the creation of separate, autonomous transportation authorities or agencies that may not pay close attention to local constituencies or seek their input. For example, Fairmount Indigo Corridor activists were disappointed to learn that plans for more frequent service on the rail line, featuring smaller cars, were put on hold indefinitely by Massachusetts officials in 2016 due to the cars’ $240 million price tag.\textsuperscript{150} Localities largely depend upon their states for the capital funding of transit infrastructure as illustrated here.

Local control over zoning can also derail TOD. \textit{Euclidian} zoning, which results in the segregation of land uses from each other, does not work well in TOD’s mixed-use environment.\textsuperscript{151} The Fairmount Indigo Corridor plan points out that new zoning will be needed to support the plan’s housing strategies and projected development near rail stations; more specifically, increases to allowable density and height must be implemented to encourage mixed-use redevelopment.\textsuperscript{152} Zoning involves governmental interventions in the marketplace. Zoning regimes that enforce low-density, automobile dependent development are viewed as conventional whereas land-use restrictions to achieve higher than usual densities and more compact, clustered development have not yet fully entered mainstream thinking, thereby posing an impediment to TOD.\textsuperscript{153} A national survey of developers conducted in 2001 suggested, however, “that developers perceive both considerable market interest in and an undersupply of alternative development.”\textsuperscript{154}

Fourth, the local government must ensure that all transit-oriented development activity is coordinated both within the municipality and among the
many different private and public actors that will come into play during the TOD process. TOD will necessitate local governments to be involved in a number of diverse functions. They must plan, shape, and facilitate the development while responding to a number of different constituent groups. Further, they must oversee developers to make certain that they adhere to approved plans and implement TOD successfully.

In the United States, local governments usually must coordinate transit-oriented development with regional and state transportation agencies that bear responsibility for building transit systems. These agencies may be subject to pressures and expectations, such as the need to maximize revenues and minimize subsidies, which can take priority over their TOD roles. One key implementation step presented in the Fairmount Indigo Corridor Plan stresses the importance of transportation network integration, namely that “integration with the Boston’s rapid rail network should be a focus of Corridor-related outreach.”

Local governments also bear responsibility for oversight of the transit part of TOD, which must be well executed and made an integral part of the development. Transit-oriented development will best succeed when high-quality transit service is provided. Location efficiency has been highlighted as an important aspect of TOD. It calls for transit stations and stops to be conveniently located so as to allow riders to reach their destinations without difficulty. Density must be sufficient to ensure enough customers will use the transit to make it efficient. Transit must also be interconnected with the corridor’s network of streets, and infrastructure must be scaled to be inviting and convenient for pedestrians.

Coordination of TOD within a municipality is equally important. Nearly all of the City of Johannesburg’s 18 municipal departments, defined as role-players in the End of Term Report for the years 2006 to 2011, undertook some developmental mandates and functions that relate to transportation and economic development. Municipal departments have a tendency to develop a silo mentality, and it is important to find new administrative structures that break down these silos and promote the integration of municipal functions across departmental lines.

Finally, equitable considerations in the planning of transportation infrastructure and services must be kept constantly on the horizon. Equity can be overlooked when public officials focus primarily on the economic developmental aspects of TOD because it produces tax revenues and involves powerful constituencies that are adept at power brokering. While considerable progress has been made in reducing inequities in Soweto, at least one commentator has argued that the “state must move beyond its rose-tinted depiction of Soweto and acknowledge that social and spatial inequalities remain across Soweto, especially on the spatial peripheries.”
Major cities in the United States are coping with equitable issues caused by the effects of gentrification, which has become a major issue in Boston. Empty nesters and millennial professionals who enjoy the amenities of urban life are flocking to cities, thereby increasing the demand for inner city housing and causing housing prices to rise. The rising cost of city living is causing the displacement of minorities and lower-income households from neighborhoods in which they have had a longtime presence; many of the displaced are moving to either the inner suburbs or ring cities around central metropolitan cities such as Boston. The Fairmount Indigo planners believe that diverse mixed-income neighborhoods can be retained in the Corridor through the promotion of home ownership and the addition of “a variety of housing units affordable to a range of household incomes.” Multi-family housing can be built directly adjacent to train stations that produces a density greater than the surrounding context.

IV. TRANSIT-ORIENTED DEVELOPMENT PLANNING FOR THE CORRIDORS OF FREEDOM AND THE FAIRMOUNT INDIGO CORRIDOR

Although agreement largely exists as to the nature and elements of transit-oriented developments, the role of local governments in effectuating TOD may differ. Because TOD requires decision making on a number of issues, including the location of public infrastructure, plans must be drawn to implement it strategically so as to ensure accountability and successful developments. Extensive plans have been made for both the Corridors of Freedom and the Fairmount Indigo Corridor. The article next describes the planning processes for these corridors.

A. FAIRMOUNT INDIGO PLANNING PROCESS

The Boston Redevelopment Authority, now called the Boston Planning and Development Agency, serves as the governmental planning agency for the City of Boston. It conducted a three-year study that identified the Fairmount Indigo Corridor’s opportunities for transit access, public realm improvements, community building, and development, both commercial and residential. The process, which began in February 2012, examined both short and long-term strategies to improve capital investment, public infrastructure, and job access along the Fairmount Indigo rail line. The planning effort concentrated on providing guidance for the following: (1) physical and economic development; (2) transit-oriented development and sustainable growth; (3) economic prosperity for Corridor residents and businesses; and (4) integration of Corridor initiatives with existing planning initiatives so as create one vision for the future. While Corridor and station area planning were coordinated, they were approached as two distinct levels of planning.
The Fairmount Indigo plan envisions each station area as an opportunity “to leverage recent investments in transit to maximize community building and neighborhood improvement.” While the Newmarket and Readville stations, lying at opposite ends on the Corridor, are current economic hubs reserved for economic development, the other station areas lying between them are viewed as suitable for both commercial and residential uses that present opportunities for new mixed-use development that strategically serve neighborhood needs. In addition to strengthening neighborhood centers around the rail stations, the plan also seeks to reinforce the diversity of the Corridor neighborhoods by making current residents and businesses the primary beneficiaries of the Corridor improvements and amenities. While emphasizing the distinctiveness of the neighborhoods, the plan projects the necessity to make the neighborhoods livable with high quality housing choices, improved public spaces, streetscapes, and infill of vacant lots.

A major goal of the Fairmount Indigo planning process is to make each station area a “complete neighborhood,” resulting in the retention of its identity and uniqueness without the disruption of the residents already in the Corridor. The Corridor plan defines a “complete neighborhood” as “a residential community that has all aspects of life within a short walk.” Planning is developed around this description, which squarely fits within the concept of transit-oriented development. The plan breaks a “complete neighborhood” into six components: prosperity, home, place, getting around, parks and public space, and quality of life.

The “prosperity” topic area of the Corridor plan focuses on the Corridor’s economic development with emphasis placed upon attracting new economic activity in the Corridor and creating greater opportunities for existing anchors, businesses, shops, and destinations in the Corridor. Each topic area includes strategies. The plan presents the following “prosperity” strategies: (1) invest in training and education; (2) strengthen “Main Street” activity; (3) support small business; (4) create catalyst investments (use of publicly owned real estate to attract private investments); and (5) grow job center bookends (Newmarket and Readville area stations as centers for industries and employment that reinforce transit use and inter-Corridor connections). Although each of these strategies is in keeping with transit-oriented development, the focus on investment in training and education again shows the attention paid to helping residents improve their employment opportunities.

The “home” element of the Corridor plan addresses the opportunities and issues that relate to housing supply and demand in the Corridor. Because access to a transit corridor increases the desirability and value of surrounding property, steps need to be taken to mitigate the displacement of existing residents in need of affordable housing. At the same time, the housing must be of a quality so as to make it attractive for residents to stay in the neighborhood. The plan projects...
that “a variety of housing units affordable to a range of household incomes” must be available to retain Corridor affordability in the future.\footnote{185} Workforce housing, defined as including housing for “residents with 60% of the area median income,” is to be included in the mix of units for each new housing development.\footnote{184} The plan calls for the integration of workforce housing with other housing units so as to be indistinguishable from them.\footnote{185}

In keeping with transit-oriented development, the plan provides for the creation of new transit-oriented housing immediately adjacent to the stations, at a density greater than the two and three-family homes common in the Corridor.\footnote{186} Increased density is viewed as beneficial because it will result in more Main Street activity, greater neighborhood walkability, and increased rail ridership within the Corridor.\footnote{187} Other “home” strategies focus on infill housing in vacant lots, the improvement of the existing housing stock, and more mixed-use activity in Corridor Main Streets.\footnote{188}

Boosting the image of Corridor communities and places through new investments and improvements positively reshapes them.\footnote{189} The Corridor plan sets forth some place making strategies to help Corridor places become more memorable and recognizable. One strategy involves reinforcement of active ground floor storefronts in order to enhance a sense of place and to create more walkable environments.\footnote{190} Because each station area possesses a rich history and culture, it is hoped that art, sculpture, and urban details can be used to showcase this asset as improvements are made to the built environment.\footnote{191}

Improvements to the Main Street districts can also strengthen the concept of “complete neighborhoods” through expansion of pedestrian areas, gateway streetscape treatments, and redevelopment enhancements.\footnote{192} The areas around rail stations also have to be treated as place making priorities.\footnote{193} The building patterns that surround a station should reinforce it as a local asset.\footnote{194} This goal will require time and private investment, but in the planning stage it is necessary to think about how the station can be transformed to create a sense of arrival and importance by refurbishing public spaces near it.\footnote{195} Finally, the plan’s “place” strategies include good food and anchor restaurants to lend character and identity to station areas.\footnote{196}

The transportation piece of transit-oriented developments sometimes does not receive adequate treatment given the necessity to make surrounding land development successful.\footnote{197} To maximize TOD success, strategies must be effective in motivating and increasing transit ridership.\footnote{198} Although the Corridor plan could address this issue more directly, it does lay out several options to increase mobility throughout the Corridor. In its “getting around” section, the plan outlines these tactics: (1) improve walkability and create pedestrian friendly environments; (2) increase train frequency and make improvements that better integrate the Fairmount
Indigo Line with the subway system; (3) implement new train technology;\textsuperscript{199} (4) make each station a mobility hub that provides connections for rail access to bus access and other alternate modes of travel, including pedestrian and bicycle lanes; and (5) manage parking in the station areas to enable pick-up and drop-off for vehicles and to accommodate Main Street customers.\textsuperscript{200}

Finally, the plan addresses the importance of increasing access to parks and public space along the Corridor, as well as other quality of life issues. The creation, preservation, and integration of open space has been described as a core principle of transit-oriented development.\textsuperscript{201} The plan highlights the importance of improving Corridor connections to link existing and new open spaces.\textsuperscript{202} A greenway, spanning the length of the Corridor, will provide a multi-use pedestrian and bicycle path to “provide connections between parks, community gardens, schools, historic sites, community centers and shopping districts.”\textsuperscript{203} Vacant parcels in the Corridor provide one resource to expand and fill gaps in the Corridor’s open space network.\textsuperscript{204} A more developed Corridor greenway could also incorporate local food production by strengthening the amount of urban agriculture already in existence.\textsuperscript{205} Other projected community benefits include the creation or expansion of station entry plazas to connect adjacent streets to the station and to the community at large.\textsuperscript{206}

Given the Corridor’s ranking as among the City of Boston’s lowest in a variety of quality of life measures, the plan proposes strategies to improve public safety, enhance neighborhood health, and increase the availability of core amenities and services, such as grocery stores, childcare, laundromats, and business centers.\textsuperscript{207} The plan calls for creating stronger connections between the Corridor and regional institutions, including higher educational and medical institutions and philanthropic organizations.\textsuperscript{208} The plan’s “quality of life” section concludes with an emphasis upon the benefits that can be obtained by highlighting the diversity within the Corridor area through cultural events, special attractions, and parades.\textsuperscript{209}

\textbf{B. JOHANNESBURG CORRIDORS OF FREEDOM PLANNING PROCESS: THE EMPIRE PERTH DEVELOPMENT CORRIDOR STRATEGIC AREA FRAMEWORK}

Strategic Area Frameworks (“SAFs”) have been created to provide a basic mechanism for the planning and development of the Corridors of Freedom from a spatial policy perspective.\textsuperscript{210} The Corridors once developed are expected to transform the entrenched apartheid settlement patterns that left sprawling low-density areas on Johannesburg’s outskirts for the majority of working class and poor citizens.\textsuperscript{211} Without access to viable public transport systems, the residents of these marginalized areas found it difficult to reach workplaces and other economic opportunities more often located in the central city.\textsuperscript{212} It is envisaged that implementation of the SAFSs will result in well-planned transport arterials that
provide easy access to the City and foster transit-oriented development bringing “a vibrant mix of high density developments, accommodation options, office, retail and recreational spaces.”

As clearly stated, “the SAF does not exist in isolation to other levels of planning, but is considered rather as a key component within a broader range of plans.” Unlike the Fairmount Indigo corridor planning that appears not to be coordinated comprehensively with other levels of planning in Boston or the Boston metropolitan area, the SAFs are interrelated with other City of Johannesburg plans, including the City’s Growth and Development Strategy 2040, which provides long-term strategies for the City’s future growth by identifying priorities, key challenges, and growth targets. Every five years the City plans on a shorter-term basis through its Integrated Development Plan (“IDP”). The IDP and its accompanying Spatial Development Framework then translate the Growth and Development Strategy into a policy framework on a city scale. A Regional Spatial Development Framework then provides a detailed assessment of an area of the City across a range of sectors that materializes in an overall structure for the area by defining key structuring elements and zones for development. The SAF next comes into play by delivering a spatial framework for distinct local areas, which may be developed on the scale of a precinct or a small town if part of an Urban Renewal Plan. The Precinct Plan increases the level of planning at the local level by providing detail design and development guidance covering land uses, desired urban form directives, public space intentions, and building guidelines. This precinct planning deals with overall urban form and includes a detailed set of actions to implement the plan.

The SAFs provide locational guidance and response guidelines to help achieve growth within the Corridors of Freedom. The Empire Perth Development Corridor is located immediately to the west of Johannesburg’s Central Business District along Empire and Perth Roads. This Corridor connects two settlements most significantly impacted by apartheid in Johannesburg—Alexandra at the northern end of the route and Soweto on Johannesburg’s southwestern periphery. Viewed as a strategic location, the Corridor provides links to other important metropolitan routes, and rail lines cross it. Thus, the Empire Perth Corridor serves as a connecting point for various Johannesburg districts and areas due to its “accessibility via private and public transport, with Bus Rapid Transit, Gautrain Feeder services, and future high speed Metrorail services.” The Corridor forms a gateway between the areas marginalized by apartheid and the visualized economic, educational, and recreational opportunities both along the Corridor and in central Johannesburg.

Like the Fairmount Indigo plan, the Empire Perth Development Corridor Strategic Area Framework is designed to spearhead economic development through
TOD strategies as well as promote transportation equity. It succinctly outlines key issues and key opportunities to resolve some of these issues. For example, the Empire Perth SAF notes that current configurations for zoning and land use do not fully support the potential for development along the Rea Vaya trunk route, which lacks the density needed to make the route functional from a TOD perspective. Opportunities exist, however, for an agglomeration of employment opportunities due to the Corridor’s strategic location with proximity to the Central Business District and inclusion within its expanse of two of South Africa’s most prominent tertiary educational institutions, the University of Johannesburg and the University of Witwatersrand, Johannesburg.

After noting the types of institutions and land uses contained in the Empire Perth Corridor, which are referred to as “study areas,” the Empire Perth SAF presents six principles to guide Corridor development, namely destinations, density, design, distance, diversity, and demand management. These principles are quite similar to the Fairmount Indigo plan’s emphasis on prosperity, home, getting around, parks and open space, quality of life, and mobility. The Empire Perth SAF, however, focuses more than the Fairmount Indigo plan on mobility and the necessity to develop the Empire Perth Corridor so as to make it a critical transportation node within a metropolitan transportation system. Under the principle “destinations” emphasis is placed upon coordinating transit, biking, and walking within the Corridor so as to provide cost effective and direct access to more destinations. The principle “distance” buttresses the “destinations” principle by calling for the implementation of a well-connected street network that in lieu of favoring driving will “maximize the capacity to move people by developing environments that encourage people to walk, bike and take transit.” The “demand-management” principle again prioritizes a comprehensive transportation system through development of the Corridor in a manner that people’s needs can be met close to their Corridor location so as to reduce travel distances, traffic congestion, and air pollution.

The “density,” “design,” and “diversity” principles in the Empire Perth SAF all reinforce TOD principles similar to those adopted by the Fairmount Indigo plan. Intensive development along the Corridor is encouraged to create compact communities with access to different transportation modes, thereby reducing pressures to develop suburban and rural areas. Again TOD necessitates good urban design that creates streets and public spaces so as to take into consideration the needs of a range of users. The SAF reflects the view that the Corridor should be developed in a manner that makes public spaces and facilities comfortable and welcoming; further, context-sensitive designs should reinforce “the distinct history, culture, and character of the corridors’ various neighborhood.” The SAF’s “diversity” principle reflects the Fairmount Indigo plan’s strong emphasis on
creating vibrant and diverse mixed-use communities along transit corridors that will provide for a range of housing choices, services, and facilities, all comprehensively planned so as to enhance the quality of life for people and businesses.\textsuperscript{239}

The Empire Perth SAF is a very detailed and comprehensive plan that goes far beyond the establishment of principles for coordinating transportation and land uses in the Empire Perth Corridor. It provides an assessment of current Corridor conditions, a strategic framework for maximizing transportation movement and development within the corridors, development guidelines for the creation of quality urban places, and more detailed plans for five focus areas within the Corridor that have priority status. The SAF concludes with a section on mechanisms for implementation that identifies a key set of projects for development facilitation. A list of 53 projects specifies the entity with jurisdiction over the project and the project’s estimated budget.\textsuperscript{240}

The Empire Perth SAF revolves around four key elements or mechanisms for restructuring the Corridor: (1) a transport framework for movement within the Corridor, (2) a structure for the “spatial economy” that promotes mixed-use areas and integrates them into a corridor system, (3) a structure of “social infrastructure” that clusters social facilities and services across the Corridor, and (4) guidance for appropriate densification within the Corridor.\textsuperscript{241} Each of these structuring elements is described in detail. The movement element, for example, covers the public transport spine, regional key arterial connections, and key public connectors that join the public transport spine with its secondary transportation network.\textsuperscript{242} Figures included in the plan show the BRT trunk route, the BRT feeder route, key regional links, and future public transport proposals.\textsuperscript{243} Figures are added also for the spatial economy and the social clusters elements that specify the location of existing and future activity nodes, existing retail and mixed use strips, and the location of social infrastructure.\textsuperscript{244} The section on densification covers (1) appropriate areas for densification, (2) the process for increasing densification, including the addition of dwelling units, planned greater density in future subdivisions, and higher density infill, and (3) the use of 15 different diagrams that outline typologies to achieve greater densification depending on the type of building, block formation, and location.\textsuperscript{245}

The Empire Perth Strategic Area Framework includes some particularly helpful guidelines to achieve the urban form envisioned for future development. The goal is to establish the Corridor as a quality urban place that achieves a human scaled environment, a safe pedestrian realm, alternate modes of transportation, mixed land uses, and a sustainable environment.\textsuperscript{246} This Development Guidelines section of the SAF provides guidance as to how new buildings should be designed to frame streets and open spaces; it notes that the aesthetics of a building, including its access points, façade, roof line, windows, and access points, constitute vital
factors in how the building impacts the environment and is perceived. The detailed guidelines address (1) building orientation and frontage, (2) building heights, (3) minimum ground floor height, (4) side building step-backs, (5) transition to neighborhoods, (6) building articulation, (7) materials, (8) access and parking, (9) communal space, and (10) sustainable and green architecture. Guidance with respect to green building is ambitious—development should aim to obtain “a minimum rating of 4 stars in the Green Star rating system (or equivalent).” The use of energy efficient technologies, adaptation to local climatic conditions, and the use of environmentally friendly and renewable materials are all emphasized as factors “to create a built fabric that responds to the principles of ‘sustainable’ and ‘green’ architecture.”

C. COMPARISON OF PLANNING PROCESSES FOR FAIRMOUNT INDIGO CORRIDOR STUDY AND EMPIRE PERTH DEVELOPMENT CORRIDOR STUDY

Johannesburg’s Empire Perth Development Corridor SAF encompasses more detailed plans than does the Fairmount Indigo Corridor Plan, and the City’s long-term strategic TOD planning gives it a strength that Boston lacks. First, the Corridors of Freedom cover larger urban geographical areas than does the Fairmount Indigo Corridor. More importantly, the Corridors of Freedom are viewed as of paramount strategic importance to reverse apartheid spatial planning. While the racial and class divisions that led to underdevelopment in the Fairmount Indigo Corridor are evident, this Corridor’s plan is limited to treatment of one area; it is not viewed as a prescription or plan for an entire metropolitan area. In contrast, the Corridors of Freedom planning is woven into the planning context for the entire metropolitan area while the Fairmount Indigo planning effort only addresses one geographical area and is not seen as a metropolitan-wide strategy. It should be noted that the City of Johannesburg is a single-tier metropolitan municipality giving it governance powers over a much larger territory than the City of Boston, which is only one city among the 101 cities and towns that comprise the metropolitan Boston area.

Boston’s less comprehensive TOD planning in comparison to the strategic area frameworks completed for the Corridors of Freedom may be attributable to its social and economic milieu. In the United States, planning by governmental entities historically has been viewed with some skepticism. Strategic long-term plans such as TOD requirements may be perceived as unnecessary interferences with the marketplace. For example, Met Council’s Thrive 2040 plan has been criticized as “social engineering” designed to redistribute wealth.

Johannesburg is viewed as being innovative in linking its infrastructure plans with budgets, thereby ensuring greater implementation of its planning efforts to manage growth and development. The Fairmount Indigo communities must
depend upon cooperation and coordination among multiple governmental bodies with respect to the funding and implementation of plans for the Corridor. Even if the City of Boston were to make this Corridor a top priority, full implementation of Corridor plans would depend upon a similar conviction on the part of the MBTA and the Commonwealth of Massachusetts.

The success to date of the Fairmount Indigo Corridor planning initiative lies in its broad base of community support. Launched by the Greater Four Corners Action Coalition in 2000, the campaign for the transit Corridor has received the support of numerous local allies and partnerships that have worked with the Coalition to find funding from a variety of sources, including the United States Department of Housing and Urban Development, the Massachusetts Department of Transportation, the City of Boston, and private foundations. Thousands of Corridor residents have participated in shaping the vision for the Corridor; they have taken part in project planning, rallies, and collaborative meetings with public officials.

In contrast to the origin of Fairmount Indigo rail corridor, Johannesburg’s BRT system was initiated in 2006 by City officials who were impressed with the operation of the BRT systems they viewed in Bogotá, Colombia. After this study visit in August 2006, the Johannesburg City Council officially approved the adoption of a BRT system in November 2006, and construction began in October 2007. The project was pushed forward in preparation of the 2010 FIFA World Cup, not leaving time for a lengthy consultative process with local residents. It is unknown whether greater community involvement would have resulted in greater BRT ridership, which needs to be increased to lower costs.

Generally speaking the BRT system in Johannesburg is considered a success despite the challenge of providing public transport to a population marked by poverty and dispersed through spatial segregation, which has resulted in low urban density. In a survey of respondents who resided in the area surrounding the Johannesburg stadium, over 40 percent of them felt that public transport was better than it had been before transportation investments were made in preparation for the 2010 FIFA World Cup. While considerable progress has been made in reducing inequities in Soweto, at least one commentator has argued that the “state must move beyond its rose-tinted depiction of Soweto and acknowledge that social and spatial inequalities remain across Soweto, especially on the spatial peripheries.”

Most striking are the similarities rather than the differences in the evolution of the Corridors of Freedom and the Fairmount Indigo Corridor. These cities, at the local level of governance, have been the prime movers in creating greater mobility for their residents. The initiation and implementation of these transit
corridors would seem to fulfill the prophecy that cities and metropolitan areas will play an increasingly important role in the twenty-first century as “engines of economic prosperity and social transformation.” Both cities have struggled, however, in coordinating their transportation priorities within the hierarchical governmental chain. In South Africa, “the three spheres of government often act independently without due regard for the impact of ‘siloh decisions’ on the collective.” In Boston, city officials must coordinate with federal and state departments of transportation as well as independent state authorities given transportation responsibilities such as the MBTA. Decision making by the Governor of Massachusetts and the Massachusetts General Court, the Commonwealth’s legislative body, frequently affect public transport in the City.

Both municipalities operate in a milieu in which clear authority may be lacking as to their empowerment to undertake certain public transport duties. In Massachusetts, cities and towns may exercise power only to the extent that their activity is not inconsistent with statutes enacted by the General Court, the Commonwealth’s legislative body. Further, the Massachusetts constitution restricts the exercise of local power in such vital areas as taxation and the borrowing of money unless authorized by the General Court. Until the adoption of The National Land Transport Act 5 of 2009, it was not clear in South Africa that local municipalities were empowered to undertake public transport duties. The Act devolved such duties to municipalities provided they had the administrative ability to perform this function. The Act was a significant devolution of power given the historical structure in which public transportation responsibilities were split among the national government, the provincial government, and municipalities with the national government exercising dominion over rail, the provincial government managing bus systems, and the municipalities made responsible for planning. Thus, the Rea Vaya BRT system was initiated and constructed by the City of Johannesburg before the Act’s devolution of power provided better clarification as to the City’s public transport functions. When the national and state governments fail to provide clear direction and authorization for municipal activity, many municipal officials may be unwilling to act, thereby impeding entrepreneurship and attention to the basic needs of their residents.

CONCLUSION

Cities play an important role in increasing equitable access to public transport. Their public officials must become strong advocates for connecting all city areas through public transit systems. In Johannesburg and Boston, racial and spatial segregation has resulted in the disconnection of outlying areas from the urban core and employment centers. The construction of the City of Johannesburg’s Rea Vaya bus rapid transit system and the City of Boston’s
reactivation of its Fairmount Indigo rail line demonstrate how greater transportation equity can be achieved by connecting marginalized areas to a regional transportation system. The implementation of the Rea Vaya bus rapid transit system succeeded due to the commitment by all three spheres of government, national, provincial, and municipal, to mitigate the effects of apartheid segregation. South Africa’s preparation for hosting of the 2010 FIFA World Cup also served as a catalyst to building integrated rapid public transport networks. In Boston, local activists and collaborative neighborhood groups heightened awareness of the benefits that could result from reactivating the Fairmount Indigo line and developing its corridor, the home for a diverse group of people. Access to public transport is especially important in Boston as its congested urban core makes other forms of travel inefficient and costly. The Fairmount Indigo rail line, while still not operating with the regularity of other MBTA lines, has improved the mobile equity of those living within its corridor.

The goal to increase public transport has been boosted by the potential for economic development along well-designed transit corridors. Both Johannesburg and Boston have undertaken extensive planning to effectuate transit-oriented development. TOD makes a strong public planning process imperative due to the complexity of undertaking it. This complexity stems from the myriad actors involved in TOD, necessitating coordination among transit providers, developers, community groups, and a maze of city departments overseeing such diverse functions as transportation, public works, parks, planning, and land use. For TOD to be successful, commentators have noted that “[t]he fragmented institutional structures for planning transportation systems and managing urban growth will also have to be revamped.”

TOD plans for both cities are more similar than different even though such plans must take cognizance of local conditions that might not be transportable to another municipality. Both cities have laid out well-recognized principles to guide development that address important TOD elements such as design, density, mixed uses, diversity, and transit connectivity. Johannesburg’s plans for the development of its Corridors of Freedom along its BRT transit lines are much more detailed than those Boston has laid out for its Fairmount Indigo rail line. Perhaps this comprehensive planning is attributable to the involvement of all three South African spheres of government in spatial planning. Johannesburg’s integration of TOD with the City’s efforts to contain urban sprawl and reduce fossil fuel usage should enhance its success. In addition, Johannesburg’s status as a metropolitan municipality gives it the ability to plan for a transit system on a regional basis whereas Boston lacks any metropolitan regional authority.

Although the scope of future development along the Corridors of Freedom and the Fairmount Indigo rail line cannot be predicted with certainty, both
Johannesburg and Boston have designed plans that should ensure many positive outcomes. The plans recognize the impediments to TOD and have attempted to provide guidance to meet the many challenges of TOD implementation. The availability of funding will largely determine whether these plans come to fruition. The City of Johannesburg has been benefited by a national commitment to fund the Rea Vaya BRT, and Boston has also received federal and state funding. Revenue from value-capture programs can also be used to help jump-start TOD. Hopefully, future funding will be available to fulfill the vision that these two cities have formulated to provide equitable access to public transportation.

*Professor of Law, Suffolk University Law School, and former dean of the Georgia State University College of Law, 1996-2004; A.B., Colby College; J.D., University of Chicago Law School. This article is submitted in connection with participation in Study Space IX, Cape Town, a weeklong intensive workshop entitled Revaluing the City: Land, Infrastructure and the Environment as a Catalyst for Change and held on June 27-July 1, 2016 in Cape Town, South Africa.


2 See *Corridors of Freedom: Re-stitching our City to Create a New Future*, CITY OF JOHANNESBURG 10, http://www.joburg.org.za/images/pdfs/corridors%20of%20freedom_s.pdf (last visited Jan. 3, 2017) [hereinafter *Corridors of Freedom*]. Apartheid effects have been described as follows:

The majority of South Africans have been forced by apartheid social engineering to live on the outskirts of cities and towns. In terms of these policies they were temporary sojourners, fit only to provide cheap labour to industry and commerce, unable to share in the fruit of their production.

*Id.*


5 See Parks Tau & Lesley Lokko, *We Need to Start Talking About the Future, in Cityscapes Magazine: Re-thinking Urban Things, Issue #7: Futurity 76* (Sean O’Toole & Tau Tavengwa eds.).

7 Tau & Lokko, supra note 5, at 79.


9 See Corridors of Freedom, supra note 2, at 10.

10 See Tau & Lokko, supra note 5, at 80.


12 See Fairmount Indigo Planning Initiative: Executive Summary, CITY OF BOSTON & BOSTON REDEVELOPMENT AUTH. 4 (Sept. 2014), http://www.bostonplans.org/getattachment/9251b1ae-7526-4b43-b7f5-77732890169f [hereinafter Fairmount Indigo Executive Summary].


14 See Remaking of Soweto, supra note 3, at 2.

15 See id.

16 See id.

17 See id. at 3-4.

18 See Remaking of Soweto, supra note 3, at 2.

19 See id.

20 See id. at 3.

21 See id.

22 See Remaking of Soweto, supra note 3, at 3.

23 See id.


25 See Harrison & Harrison, supra note 24, at 300, 302; Remaking of Soweto, supra note 3, at 4. For a description of achievements from 2001 to 2013, see generally Remaking of Soweto, supra note 3. Improvements included road paving, pedestrian walkways, a cycle way, street lights, additional housing, and the provision of electricity, sanitation, and water services. See id. at 6-7.

26 See Harrison & Harrison, supra note 24, at 302.

27 See id. at 302-303.

28 See id. at 303.
29 See Astrid Wood, Transforming the Post-apartheid City through Bus Rapid Transit, in Urban Governance in Post-Apartheid Cities: Modes of Engagement in South Africa’s Metropoles 79, 91 (Christoph Haferburg & Marie Huchzermeyer eds., 2014).

30 See Harrison & Harrison, supra note 24, at 303.

31 See Remaking of Soweto, supra note 3, at 4, 9.


34 See Fairmount Line History, supra note 32.


36 See Fairmount Line History, supra note 32.

37 See Fairmount Indigo Corridor Plan, supra note 35, at 8.

38 See Fairmount Indigo Planning Initiative, supra note 33.

39 See Fairmount Line History, supra note 34.

40 See Fairmount Indigo Planning Initiative, supra note 33.

41 See id.

42 See id.


44 Fairmount Indigo Planning Initiative, supra note 33.

45 See Id.

46 See Fairmount Indigo Corridor Plan, supra note 35, at 11.

47 See Fairmount Indigo Corridor Plan, supra note 35, at 12, 15.


49 See Fairmount Indigo Corridor Plan, supra note 35, at 12.

50 See id. at 15.
See id. at 11-12. The Corridor Plan notes, “neighborhoods of the Corridor are disconnected from the broader network of educational and training institutions that are core to the City of Boston.” Id. at 78. Stronger connections between these institutions and the Corridor are recommended. See id.  

See Fairmount Indigo Planning Initiative, Corridor Plan, Appendices, CITY OF BOSTON & BOSTON REDEVELOPMENT AUTH. 47 (Sept. 2014), http://www.bostonplans.org/getattachment/b36467ef-a54a-4bc3-85fb-b5a63a3ee7bd (last visited Oct. 15, 2016) [hereinafter Fairmount Indigo Appendices].  

See Fairmount Indigo Planning Initiative, supra note 35, at 6. Designs have been drawn for a station at Blue Hill Avenue/Cummins, and the addition of stations at Columbia Road and River Street have been proposed. See id.  

See Fairmount Indigo Executive Summary, supra note 12, at 14.  

See Venter & Vaz, supra note 11, at 443; Allen, supra note 1, at 3-4.  

See Venter & Vaz, supra note 11, at 443; Allen, supra note 1, at 7.  

See Allen, supra note 1, at 9.  

See id.  


See id. at 27.  


See Allen, supra note 1, at 4.
69 See id. at 5. “The minibus taxi industry is still the most dominant mode of public transport in Johannesburg.” Id.


72 See Allen, supra note 1, at 10.

73 See id. at 11-12.


For a discussion of the new equity movement in the United States, see Angela Glover Blackwell, From Hope to Change: The New Equity Movement, 15 Race & Regionalism (No. 1) (Fall 2008), http://www.reimaginepe.org/node/2740.

75 See Fairmount Indigo Appendices, supra note 53, at 17 (Letter of Marc D. Draisen, Executive Director, Metropolitan Area Planning Council, dated June 6, 2014).


80 Id. at ES-3.

81 See id.

82 See id.


85 See id. at 6.

86 See id. at 31-32.

87 See id. at 44.


89 Id. at 38.
Equitable Access to Public Transport

90 Id.


93 See id. at 4.

94 See id. at 6.

95 See id. at 3-4, 7,9.


99 See TOD Infrastructure Financing, supra note 96, at 1.

100 See Jewitt, supra note 98, at 1954.


105 See TOD Infrastructure Financing, supra note 96, at 2.

106 See id.

107 See id.
108 See id.

109 TOD Infrastructure Financing, supra note 96, at 2.

110 See id.

111 Id.


113 S. AFR. CONST., 1996, ch. 7, § 151 (3).

114 Id. at ch. 7, § 151 (4).

115 Id. at ch. 7, § 154 (1).

116 Id. at ch. 3.


118 Id.

119 Id. at ch. 3, §40 (1)(g).

120 See id. at ch. 6, § 150.

121 S. AFR. CONST., 1996, ch. 1, § 1 (a)-(b).

122 See id. at ch. 2, § 25 (6)-(8).

123 See id. at ch. 2, § 25 (8).


125 See id. at § 24 (4).

126 See id. at § 25 (1).

127 See id. at § 25 (1).


130 See id.

131 See id. at § 5 (2)-(3).

132 See id. at § 7.


134 Id. at § 24 (1)-(2)(a).

135 See id. at § 25 (1).
See id. at Schedule 1.


See OR. REV. STAT. § 197.010 (2016). The “implementation and enforcement of acknowledged comprehensive plans and land use regulations are matters of statewide concern.” OR. REV. STAT. § 197.013 (2016).


See 1960 Mass. Acts 556, 562 (granting Boston Redevelopment Authority the powers and duties conferred on “planning boards of cities in Massachusetts by general laws applicable to Boston” and providing that the Authority “shall be deemed to be a planning body”); 1957 Mass. Acts 98 (authorizing the establishment and powers of redevelopment authorities and providing for the establishment of such an authority in the City of Boston); 1956 Mass Acts 610 (authorizing the establishment of a zoning commission in the City of Boston planning department); BPDA Board, About the BPDA, BOSTON PLANNING & DEV. AGENCY, http://www.bostonplans.org/about-us/bpda-board/meet-the-board (last visited Jan. 30, 2017).

See MASS. GEN. LAWS ch. 121B, § 5 (2016) (stating redevelopment authorities are governed by five members); BPDA Board, About the BPDA, supra note 141.


See id.

See id.

Robert Cervero & Danielle Dai, BRT TOD: Leveraging Transit Oriented Development with Bus Rapid Transit Investments, 36 TRANSPORT POLICY 127, 135 (2014), http://ac.els-cdn.com/S0967070X14001802/1-s2.0-S0967070X14001802-main.pdf?_tid=b0872734-eb2a-11e6-b810-00000aab0f26&acdnat=1486248106_0a111b00a5431867589ae02ae7e0512e.

See Todes, supra note 74, at 89.

See Mathetha Mokonyama & Brian Mubiwa, Transport in the Shaping of Space, in CHANGING SPACE, CHANGING CITY: JOHANNESBURG AFTER APARTHEID 194, 198 (Philip Harrison et al. eds., 2014).

See MANDELKER ET AL., supra note 76, at 163-65.

151 So-called *Euclidean* zoning was upheld in *Village of Euclid v. Amber Realty Co.*, 272 U.S. 365 (1926).

152 See *Fairmount Indigo Executive Summary*, supra note 12, at 11.


154 Id. at 125, 132.


156 See id.


159 See id. at 24.

160 See id.

161 See id.

162 For a description of the City of Johannesburg departmental role players and a description of their developmental mandates and functions, see *Remaking of Soweto*, supra note 3, at 13-16.

163 Harrison & Harrison, supra note 24, at 312.


165 *Fairmount Indigo Corridor Plan*, supra note 35, at 42.

166 See id.

167 See supra notes 141-145 and accompanying text.


169 See id.

170 See *Fairmount Indigo Corridor Plan*, supra note 35, at 7.

171 See id. at 20.

172 Id. at 16.

173 See id.
See Fairmount Indigo Corridor Plan, supra note 35, at 16.

See id.

See id. at 21.

Id.

See Fairmount Indigo Corridor Plan, supra note 35, at 21, 93.

See id. at 33.

See id. at 34.

See id. at 41.

See Fairmount Indigo Corridor Plan, supra note 35, at 44. The plan seeks to keep the upwardly mobile in the Corridor by creating attractive neighborhoods, and it views the promotion of homeownership within the Corridor as very important. Id. at 44-45.

Id. at 44.

Id. at 45.

See id.

See Fairmount Indigo Corridor Plan, supra note 35, at 44, 46.

See id. at 46-47. The plan recognizes that zoning changes may be necessary to effectuate mixed-use redevelopment in Main Streets. Id. at 47.

See id. at 46-47.

See id. at 51.

See Fairmount Indigo Corridor Plan, supra note 35, at 52.

See id. at 50, 53.

See id. at 54.

See id.

See Fairmount Indigo Corridor Plan, supra note 35, at 54.

See id.

See id. at 55.

See Chris Hale, TOD Versus TAD: The Great Debate Resolved . . . (?), 29 PLAN., PRAC. & RES. (No. 5) 492, 496-98 (2014).

See id. at 494.

The plan calls for the implementation of new Diesel Multiple Units. See Fairmount Indigo Corridor Plan, supra note 35, at 58, 62.

See id. at 58-63.

202 See Fairmount Indigo Corridor Plan, supra note 35, at 68.
203 See id.
204 See id. at 69.
205 See id. at 70.
206 See Fairmount Indigo Corridor Plan, supra note 35, at 69-70.
207 See id. at 76-77.
208 See id. at 78.
209 See id. at 79,
211 See id. at 9.
212 See id.
213 Id.
217 See id.
218 See id.
219 See id.
220 See Empire Perth Strategic Area Framework, supra note 62, at 17.
221 See id. at 16.
222 The Louis Botha Avenue Corridor and the Turffontein Corridor constitute the other two Corridors of Freedom. See Empire Perth Strategic Area Framework, supra note 62, at 25.
223 See id. at 26-27.
224 See id. at 26.
225 See id.
227 See id. at 27.
228 See id. at 31.
229 See id.

231 See id. at 25.

232 See id. at 30.

233 See id.


235 See id.

236 See id.

237 See id.


239 See id.

240 See id. at 114-15.

241 See id. at 51.

242 See Empire Perth Strategic Area Framework, supra note 62, at 53.

243 See id. at 52-53.

244 See id. at 56-59.

245 See id. at 62-63.

246 See Empire Perth Strategic Area Framework, supra note 62, at 68.

247 See id. at 69.

248 See id.

249 Id. at 79.

250 See Empire Perth Strategic Area Framework, supra note 62, at 79.

251 See Harrison & Harrison, supra note 24, at 299.


254 See Todes, supra note 74, at 96.


256 See id.

257 See Todes, supra note 74, at 92.

258 See Wood, supra note 29, at 81-82.
259 See Harrison & Harrison, supra note 24, at 303.
260 See Wood, supra note 29, at 88-89.
261 See id. at 88, 90, 95-96.
263 Harrison & Harrison, supra note 24, at 312.
265 See Mokonyama & Mubiwa, supra note 148, at 211.
267 See MASS. CONST. amend. art. II, § 7; Barron et al., supra note 266, at 7-8.
268 See Wood, supra note 29, at 92.
269 See id.
270 See id. at 90.
271 Cervano & Dai, supra note 146, at 137.
272 See id.