The statecraft of large transport projects:
Bus Rapid Transit in Johannesburg

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Abstract

In 2006, the nascent City of Johannesburg undertook the most ambitious infrastructure project in South African local government history. The Rea Vaya Bus Rapid Transport (BRT) system was to be not just a new way to move people around the city, but a wholesale attempt to restructure the spatial, economic, and social form of Johannesburg. With this institutionally unprecedented project, this thesis undertakes to make sense of the relationship between large state transport projects and the form and nature of the state.

The thesis uses the concept of urban statecraft (Cirolia and Harber, 2021; see also Pike et al., 2019) to examine the state as an object of policy in addition to, and at times taking precedence over, its role as the subject undertaking policy (or the vehicle through which actors undertake policy). It shows, through an intensive case study drawing on previously unavailable archival material, that the planning and implementation of the Rea Vaya BRT project required both an internal restructuring of the state in order to deliver it, and a restructuring of the outside edge of the state where it interfaced with incumbent parastatal transport operators. Furthermore it argues that failing to more deliberately and proactively restructure the state left the project unable to deliver on either its short-term or long-term promises. Doing so it develops the concept of "institutional success".

The thesis concludes by examining some of the implications of this analysis in terms of urban statecraft. These include academic implications, such as the importance of closer study of the working mechanics of the state and the projects the state undertakes, and policy implications, with relevance to the better design of major infrastructure projects.

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AARTB	Association of African Road Transport Bodies
AFC/AFCS	Automatic Fare Collection/Automatic Fare Collection System
AMTM	Advanced Metering Technology Management
ANC	African National Contract
APTM/APTMS	Automatic Public Transport Management/Automatic Public Transport Management System
AVL	Automatic Vehicle Locator
BOC	Bus Operating Company
BOCA	Bus Operating Company Agreement
BRT	Bus Rapid Transit
CBD	Central Business District
CCTV	Closed-Circuit Television
CDM	Carbon Development Mechanism
CEO	Chief Executive Officer
CETUD	Council
COJ	City of Johannesburg
CPTR	Central Public Transport Register
DART	Dar Rapid Transit
DUDA	Dar Urban Development Authority
DUTA	Dar Urban Transport Authority
EFC	Electronic Fare Collection
EIA	Environmental Impact Assessment
EMV	Europay, Mastercard, and Visa
GAPTE	Greater Accra Passenger Transport Executive
GCR	Gauteng City-Region
GCRO	Gauteng City-Region Observatory
GDACE	Gauteng Department of Agriculture and Environmental Affairs
GDS	Growth and Development Strategy
GEF	Global Environment Facility
GIS	Geographic Information Systems
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Agency for International Cooperation)
GJLGF	Greater Johannesburg Local Government Framework
GJMC	Greater Johannesburg Metropolitan Chamber
GMA	Gautrain Management Agency
GPG	Gauteng Provincial Government
GPS	Global Positioning System
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (German Society for Technical Cooperation)
IA	Internal Audit
IDP	Integrated Development Plan
IFP	Inkatha Freedom Party
IMF	International Monetary Fund
IPTN/IRPTN	Integrated Public Transport Network/Integrated Rapid Public Transport Network

ITDP	Institute for Transport and Development Policy
ITP	Integrated Transport Plan
ITS	Intelligent Transport System
JDA	Johannesburg Development Agency
JHB	Johannesburg
JICA	Japan International Cooperation Committee
JMC	Joint Management Committee
JOSHCO	Johannesburg Social Housing Company
JRA	Johannesburg Roads Agency
KFC	Kentucky Fried Chicken
LGTA	Local Government Transition Act
MEC	Member of Mayoral Committee; equivalent to a municipal minister
MMC	Member of Mayoral Committee; equivalent to a municipal minister
MOE	Municipal-Owned Entity
MTC	Metropolitan Trading Company
NGO	Nongovernmental Organisation
NIMBY	Not In My Backyard
NLTA	National Land Transport Act
NSMS	National Security Management System
NTTA	National Transport Transition Act
OCR	Optical Character Recognition
OL	Operating License
OLB	Operating License Board
PO-RALG	President's Office—Regional And Local Government
PPP	Public-Private Partnership
PTIF	Public Transport Infrastructure Fund
PTIG	Public Transport Infrastructure Grant
PTISG	Public Transport Infrastructure and Systems Grant
PTNG	Public Transport Network Grant
PTNOG	Public Transport Network Operations Grant
PUTCO	Public Utility Bus Company
PWV	Pretoria-Witwatersrand-Vaal
RFP	Request for Proposals
ROD	Record of Decision
SABOA	South African Bus Operators Association
SABTA	South African Black Taxi Association
SANTACO	South African National Taxi Council
SATC	Southern African Transport Conference
SPTN	Strategic Public Transport Network
SPV	Special Purpose Vehicle
SSMA	Scheduled Services Management Agency
TAG	Transport Authority for Gauteng
TDM	Travel Demand Management
UN	United Nations
VREF	Volvo Research and Education Foundations

1. The state gazed into the buses, and the buses gazed back.

In the early 2000s South Africa was emerging from a period of enormous political, social, economic, and institutional upheaval. The breakdown of apartheid and resulting rapid urbanization, with little investment in housing or bulk infrastructure, had led to extreme densification in urban cores and enormous informal settlements on the edges of cities. Underinvestment in public transport over the same period led to decay of systems, to be largely supplanted by privately-operated minibus taxis. White flight, both commercial and residential, led to the creation of new economic nodes in what had been suburbia, and accelerating sprawl. The result was extreme "spatial mismatch" (Budlender, 2016) between residential density and jobs, with daily commuters in the millions traversing long distances at enormous personal, social, economic, and environmental cost.

In 2003 the City of Johannesburg announced plans for a "Strategic Public Transport Network" which by 2006 had metamorphosed into the Rea Vaya ("We are Going") Bus Rapid Transit (BRT) system as part of Johannesburg's preparations for the 2010 soccer World Cup. Bus Rapid Transit is a bus technology that depends on capital improvements such as dedicated lanes and elevated stations at the road median to improve service speeds and reduce operating costs. Rea Vaya currently runs 88km of routes and collects 48 000 fares per day, a fraction of forecast ridership (although anecdotal reports indicate that true ridership is much higher). A much-delayed 17km extension to the system has been due to begin operation imminently for five years. Construction is ongoing, but Rea Vaya's capital costs for the phases already in service reached approximately R4bn (Seftel and Peterson, 2014). As such Rea Vaya remains the largest municipal infrastructure project in South African history, and a flagship example of Bus Rapid Transit, a rapidly growing mode in and beyond Africa. It represented an enormous undertaking by a newly democratised state and an even more nascent city. In a country where control of the movement of people had been central to its political economy for a century, this new era of post-apartheid transport could not but be of great significance.

There is relatively little research into the institutional political economy of African BRTs—indeed of African transport infrastructure—and what there is focuses primarily on the institutional prerequisites for a successful BRT (e.g. Poku-Boansi and Marsden, 2018). But Rea Vaya and other BRTs across Africa are associated with, indeed implicated in, major reforms of the state—that is

to say BRT projects are not only effect but also cause. Outside South Africa these reforms have uniformly taken the form of the establishment of metropolitan transport agencies (Klopp et al., 2019). These are agencies, almost always locally novel, whose remit extends beyond legacy municipal boundaries to cover (nominally) the entire so-called metropolitan urban area of the city.

These metropolitan agencies are deliberately created anew and outside of existing bureaucracies, to be technocratic institutions with high levels of internal capacity and insulated from direct political pressure at the city level. Instead they are almost always created under the auspices of a superior government executive: heads of state, except in Lagos where the agency answers to the state governor. The result is an institution of transport governance disconnected from other policy sectors such as housing or land use; and disconnected from other institutions of urban governance. This process that results in these super-municipal sub-national institutions has been called, variously, metro-regionalisation, metropolitanisation, or just metropolitan governance (Andersson, 2015; Janssen-Jansen and Hutton, 2011a; Storper, 2014). These novel institutions are not unique to the region, and are a site of political contestation and statecraft in various settings (see for example the papers in Janssen-Jansen and Hutton, 2011b; and Mabin, 2020 on Greater Paris). Nevertheless metropolitanisation has increasingly taken this particular form in Africa, often driven by BRT and other large transport projects.

In comparison South Africa's case stands out: in its major cities legacy local governments were dissolved in 2000 and replaced with metropolitan municipalities. These were institutions that, like metropolitan transport agencies, governed a much larger functional urban area, but unlike them absorbed the entire range of functions assigned previously and elsewhere to local municipalities. It was these newly established metropolitan institutions that, from 2006, undertook various projects of Bus Rapid Transit. In the case of the City of Johannesburg, its metropolitan form has been called a necessary prerequisite to the planning and implementation of the Rea Vaya BRT, as a truly metropolitan-scale transport project (Götz et al., 2011).

Institutions of the state doing transport projects is a little like the journalist's aphorism about 'dog bites man': however informative the story, it is not news. But even a cursory look at Rea Vaya (and other BRTs) shows that at least some of the biting was done by man to dog; that is, the state itself transformed over the course of the Rea Vaya project, in ways that implicate Rea Vaya. In short, this thesis asks not what the state did to Rea Vaya, but what Rea Vaya did to the state. Or more precisely, what doing Rea Vaya did to the state.

1.1. The question: transport and the state

This study is on the institutional aspects of implementing Rea Vaya, and through it transport projects and the urban state more broadly. In this way the study is situated in the concerns of the so-called new institutionalism; within this very broad cluster of approaches, the one most influential here is the regulation school.

The regulation school broadly holds that the economy can only be understood as actualised and embedded in wider social processes (Jessop and Sum, 2006). Any such particular structural configuration is a regime of accumulation, made up of the accumulation system and the mode of social regulation (or just mode of regulation) (Boyer and Saillard, 2002; Peck and Tickell, 1992). Summarising extremely briefly, the inherent instability and contradictions of the accumulation system are partially and temporarily countervailed by the mode of regulation (Boyer, 2010; Peck and Tickell, 1992). Periodic crises are both proof of that inherent instability and a major reason for ongoing institutional reform.

Originally concerned with national questions of macroeconomic policy and planning, the regulation approach has been extended to other scales, and applied explicitly to questions of space. The regime of accumulation produces spatially uneven development, both within and between countries, which opens the question of spatial specificity of the institutions of regulation (Tickell and Peck, 1992). In addition the totality of these institutions operating at different scales demands analysis of not only institutional diversity and specificity, but the interaction between these scale- and spate-specific institutions: not just specificity but also unity (Jessop and Sum, 2006; Tickell and Peck, 1992).

All of which is to say that infrastructure and its governance is directly implicated in the reproduction of the state in its national and subnational forms, the elaboration of those forms as they deliver and manage infrastructure in novel ways, and in the reformation of the state at new scales.

It is in this light that this thesis asks the question of what Rea Vaya meant for the South African state, with the intention to understand what such projects mean for states in general. There are thus two major research questions:

- How has the implementation of Rea Vaya affected the institution that undertook it, namely the City of Johannesburg?
- How has the implementation of Rea Vaya affected the larger state of which the City of Johannesburg is a part?

1.2. Everything is infrastructure, except infrastructure, which is power.

Physical infrastructure is the material manifestation of state power with wide-ranging, not to say world-changing, effects on societies, economies, and polities. In another sense of the term, infrastructure is even more directly the mechanism by which state power is exercised: 'administrative infrastructure' (Mann, 2008). This study is about the point of contact between these two infrastructures: how does administrative infrastructure build physical infrastructure; how does physical infrastructure build administrative infrastructure?

Of the various physical infrastructures, transport infrastructure has a particular importance to the state and to the city. The management of human mobility is core to what the state is and does: "a key ingredient in the constitution of state authority in the first place" (Quirk and Vigneswaran, 2015, p. 2). This is for two reasons. The first is that we can observe the control of mobility as among the state's first and most common concerns. The earliest state forms emerged to keep subjects within reach, so as to most easily extract their surplus production; the first resistance to the state took the form of escape (Scott, 2017). In the five thousand years since then, states have developed significant machinery for both limiting and promoting—within prescribed channels—the movement of people. Torpey (2002, 2000) calls this the monopoly on the legitimate means of movement. Obvious examples of this are passport controls and borders, and internal movement controls such as apartheid influx control. Kotef goes so far as to call the modern state "to a great degree a system of regulating, ordering, and disciplining bodies (and other objects) in motion. (2015, p. 6).

Similarly obvious, although seldom theorised in these terms, is the impossibility of mobility—especially by modern standards—without enabling infrastructure, to which the state is indispensable even in cases when it is privately built and operated (Easterling, 2014; O'Neill, 2013). Possibly less obvious as an example is the central concern of the capitalist state for maintaining relations of private property. Core to the *privateness* of property is excludability, which requires, among other things, laws enforced by the state to limit mobility.

The second reason for the centrality to the state of transport and its management is that the state depends on mobility for its basic functions and the exercise of its power. The state is a social relation and its authority is primarily exercised by putting its agents in physical proximity to its population. The basis for this exercise of authority is laid using transport infrastructure, from the railroads of a nascent United States to the military convoy-friendly highways of South Africa. The state is therefore "spatially malleable", its authority and institutional power mediated not only by extension through space but specifically by the nature and distribution of transport infrastructure (Adey, 2004, 2008; Boone, 2003). These two reasons together lead Quirk and Vigneswaran (2015) to declare that "mobility makes states".

As for the city, the relationship with transport is perhaps even closer. Urban space is co-constitutive with the various means of its traversal. The ability to move faster shrinks the city, if not geometrically then for all meaningful purposes. This space/mobility dialectic produces the synthesis of what Scott calls the urban land nexus, "a structured assemblage of *dense polarized differential locational advantages* through which the broad social and property relations of capitalism are intermediated […] [and which is] *the* specific object of enquiry to which any really coherent urban question must be addressed" (Scott, 1980, p. 4, emphasis in original; see also Storper and Scott, 2016). Less forcefully but no less clearly, urban scholars in the "mobility turn" have claimed that "the entire urban environment is inextricable from wider circulation networks" (Prytherch and Cidell, 2015, p. 30, citing Cooke and Lewis 2009; see also Sheller and Urry, 2006, 2016; Sheller, 2015; Moraglio, 2017).

A paradox, or perhaps just an irony, is that having shrunk the city transport infrastructure immediate begins to expand it. Whereas before the 19th century almost any city would be an urban space walkable in the space of hours, the space/time compression afforded by trams, buses, trains, and cars has constituted greater and greater areas as single cities. "Patterns of urban development are inseparable from the evolution of urban transport and mobility" (Rode et al., 2014, p. 4); "Urban form is shaped by transport design, and transport choices, plans, and investments are shaped by urban politics" (Sheller, 2015, p. 13). In extreme but not uncommon cases, the mass adoption of cars—always enabled and subsidised by state-delivered infrastructure—has extended the effective labour market of a city, and in turn its built environment, across hitherto unprecedented areas (Duranton and Puga, 2015; Sheller and Urry, 2000; Yiran et al., 2020).

The importance of infrastructure, particularly transport infrastructure, does not end there. It is ideology made concrete, and itself acts on ideologies and political processes (Harvey and Knox, 2012). It is central to the circulation and accumulation of capital (Howe et al., 2016). It is both reflective and productive of equalities, inequalities, justice, and injustice (Howe et al., 2016; Sheller, 2018; Verlinghieri and Schwanen, 2020; Von Schnitzler, 2016). It relies on and produces a special form of property rights, straddling private and public and with rules of its own (O'Neill, 2013). Indeed in its widest definitions it includes the institutions that govern social and economic life at all scales, a category that includes the state (Easterling, 2014).

For all its importance to the city and the state, however, there is something of a lacuna in the question of how infrastructure comes to be. Focusing on urban infrastructure, Cirolia and Rode (2019) identify two broad strands in the relevant literatures. The first is technical or techno-managerial, concerned broadly with the normative question of *how to build more infrastructure better*. These literatures typically start from relatively straightforward premises: that there is somewhere or everywhere a need for more infrastructure, not enough is being built, and when it is built it is done so expensively, slowly, or with disappointing results. Thus there is significant research, variously, on the relationships between infrastructure and growth (Calderon, 2009; Égert et al., 2009); the planning of infrastructure in general or for specific purposes (Giordano, 2013; Givoni and Perl, 2020); statistical indicators of/for infrastructure (Infrastructure Consortium for Africa, 2011); measurement of success and failure in transport infrastructure projects (Allport et al., 2008; Krystallis et al., 2022; Liu et al., 2015; Masrom et al., 2015); financing infrastructure (Eichengreen, 1995; Furlong, 2020; ICLEI Africa, 2015); and infrastructure and climate change mitigation and adaptation (Nemry and Demirel, 2012; Rattanachot et al., 2015; Schweikert et al., 2015; Seto et al., 2014). These literatures, while useful for scholars and practitioners whose first concern is better practices in infrastructure development, set aside large portions of what makes infrastructure interesting and important. They take the state as more or less exogenous to the work of building infrastructure, which I will argue is not just an analytic mistake but indeed a mistake even for the pragmatic task of undertaking large infrastructure projects.

The other way that infrastructure is read in the literature is through a social and political lens (Cirolia and Rode, 2019). This includes the "infrastructure turn", a focus on infrastructure in fields such as anthropology and sociology, and ranges from the technopolitics of infrastructure (Von Schnitzler, 2016) to its biopolitics (Collier and Lakoff, 2008) and the ideologies crystallised

within it (Harvey and Knox, 2012). This broad body of work also engages with the new forms of property and social relations reproduced or produced by infrastructure (Easterling, 2014; Larkin, 2013; O'Neill, 2013); the financialisation of infrastructure and its delivery (Goodfellow, 2020a; O'Brien et al., 2019b; Pike et al., 2019); its gendered and racialised aspects (Anand, 2012; Anand et al., 2018); and its role in the circulation of global capital (Goodfellow and Huang, 2021) and in the functioning of the city (Graham, 2010; Graham and Marvin, 2001). These diverse literatures are harder to sum up, but where they engage with the actual delivery of infrastructure they tend to focus on the political and the political-economic: infrastructure's role in urban and national politics, national discourses, and relations with financiers or state actors.

A significant thrust of this literature, especially that on African urban infrastructure, is concerned with the links between new infrastructures and processes of global capitalism. Wiig and Silver (2019) call this "global infrastructures" and focus on processes of standardization and imposition of infrastructure from outside, and Kanai and Schindler (2019) speak of the "infrastructure scramble" and its role in planetary urbanization—as well as infrastructure-driven urban sprawl. Infrastructure is also the product of enormous finance flows: Goodfellow (2020a) considers the growing importance of infrastructures as a global asset class and the implications for African urban politics; while Zajontz and Taylor (2021) draw on Harvey (2003) to describe an "infrastructural fix" to oversupply of global (but especially Chinese) capital and production capacity.

Once the infrastructure is financed, however—and for whatever reason—infrastructure implementation has a political economy all of its own, at a level of detail much more granular than who gets which contracts and where the money originates. Furthermore, the state is not just a link in the chain of infrastructure delivery but itself an entire complex ecosystem roiling with the undertakings of infrastructure. Understanding infrastructure requires taking more seriously what the state is and does with respect to it. This study attempts to do exactly that, and in so doing reveal something about the nature and functioning of the state, and how those exist and change with respect to large projects such as the building of infrastructure.

There are two more literatures to note here. The first is the rapidly growing body of research on "megaproject management". Megaprojects are frequently defined as any single project with a cost exceeding $1bn (Denicol et al., 2020; Haynes, 2002). There are also more nuanced definitions that incorporate either further notable characteristics of megaprojects, or tailor the

definition to contexts where a project with lower costs represents as large an undertaking as a $1bn project might in the richest countries (Dimitriou et al., 2013; Flyvbjerg, 2014; Levy, 2022). In justifying the coherence of the category scholars frequently point to discontinuities in project characteristics and outcomes that take place as they reach very large scale (e.g. Shenhar and Holzmann, 2017). The nature of megaprojects as "large-scale, complex, and one-off capital investments in a variety of public and private sectors" (Denicol et al., 2020, p. 2) means that many but not all megaprojects are to build physical infrastructure of one kind or another, and the cost and scale of infrastructure—not to mention contemporary PPP and other contracting practices—is such that the megaproject is a typical delivery mode (Ansar et al., 2017; Flyvbjerg, 2014). Indeed, the categories of megaproject and infrastructure are sometimes casually conflated (e.g. Denicol et al., 2020; Greiman, 2013). This literature is overwhelmingly concerned with "critical success factors" of megaprojects and the dire consequences of failure, using approaches ranging from large-n statistical studies to comparative case study research (De Jong et al., 2013; Dimitriou et al., 2013; Flyvbjerg, 2016, 2014; Wang et al., 2022). This literature too neglects the actual workings of the state, except to the extent that some scholars posit bureaucrats as mendacious connivers trying to trick politicians and publics into building infrastructure ill-advisedly (Flyvbjerg, 2005). This reflects, apart from anything else, a resolute methodological individualism: their archetypical object of study is the project manager and perhaps the politician, and their research aimed at improving the actions of both; structural factors seldom feature.

The second literature to note is the cognate work of the Transit Costs Project, which has spent the last handful of years studying the strictly empirical question of why subways cost so much to build in the United States (Chitti et al., 2022; Goldwyn et al., 2023, 2020). I name them in particular because their primary methodology of intensive qualitative case studies is so rare, and so instructive of the value of understanding these projects from the point of view of those who plan and execute them. Their findings, including that the major cost drivers of United States transport infrastructure are reliance on consultants and lack of state capacity, not only mirror my own in this study but reflect the value of taking seriously the granular details of the state and its functioning. Their findings are only partially transferable to other contexts, and entirely atheoretical.

There is thus an opening in the various infrastructure literatures for serious study of the question of how infrastructure comes to be, not in any abstract sense but in the sense of what chains

of decisions, flows of information, and structures of state crystallise intentions into concrete. This study attempts to do just that, and in doing so show something fundamental about the relationship between the state and the infrastructure it builds. In this way this study shares the fundamental problematic of the seminal work on project and policy implementation from the 1980s, especially in the "bottom-up" approach of examining actually existing bureaucratic functioning (Barrett and Fudge, 1981; Lipsky, 1971). This subfield dwindled with the onset of New Public Management from the 1990s, which was regarded both to diminish the problems of implementation and to constrain the discretion of bureaucrats that had been so central to implementation (Barrett, 2004). This study will show that not only has New Public Management not solved the hard problem of implementation, but also that the actions and decisions of bureaucrats, the structures of the bureaucracy, and its relationship with other actors remain influential to what the state does, how it does it, and the outcomes that result.

1.3. What and why is Bus Rapid Transit?

Rea Vaya is an example of Bus Rapid Transit, or BRT: indeed the (arguable) first of an increasing number of BRTs to be built and operated in Africa (Klopp et al., 2019). BRT occupies a double register in policy, as both a technology of public transport and a mode of institutional reform. This section is a high-level overview of BRT as a technology; the next section will introduce it as a means of institutional reform by showing how it has been used to restructure African urban states.

BRT consists of a series of incremental improvements to conventional buses, the aggregation and combination of which is claimed to result in a qualitative improvement in performance and resulting operational and financial efficiency, greater than the sum of their parts. Conventional bus services are almost never defined: for example the otherwise extensive glossary in Vuchic (2007) defines neither conventional buses or any of its equivalent terms. However it generally refers to a bus service using full-size buses carrying between 30 and 80 passengers operating to a fixed schedule on fixed routes. It may involve dedicated lanes for part of its routes, and indeed may feature several other improvements that are associated with BRT, below. In the absence of such improvements a conventional bus moves roughly at the speed of traffic, and typically can service its route once in each direction in the morning rush hour, and then again in the evening.

The basic rationale of BRT is that with the right combination of improvements, a given vehicle can run its route twice in each peak, thus doubling the productivity of the capital and labour required to operating each vehicle. To do this, BRT systems deploy capital-intensive improvements to reduce overall system operating costs by halving the total buses and drivers needed for a given level of service. Because in principle each bus moves twice as fast down its route, passenger travel time is much reduced for the same distance.

BRT therefore involves deploying capital to remove the factors that slow conventional buses down. The Institute for Transport and Development Policy (ITDP) standard for BRT (2016), typically treated as definitive, requires a specific set of "basic" features for a system to be called BRT. These features are listed and described in Table 1 below.

Using these features, all barriers to bus speed and efficiency are in principle removed. The bus need only speed past traffic, stopping momentarily for passengers to board and alight. The remaining barriers to speed are only acceleration and deceleration (limited mostly by passenger comfort), and top speed and stop frequency (both limited by planning considerations). In full flight, BRT is intended to very nearly transcend the limits of road-based transport: "BRT essentially emulates the performance and amenity characteristics of a modern rail-based transit system but at a fraction of the cost." (Wright and Hook, 2007, p. 11).

Beyond speed there are various associated benefits. For example, level-boarding allows for wheeled access to vehicles to be easily enabled; and controlling access with gates at the platform entrance should reduce or eliminate fare evasion. The costs involved are obvious: on top of the capital costs of conventional buses (primarily depots and minimally capitalised stops) there are entire raised stations with access gates and fare collection systems, physically segregated bus lanes, and customised signalised intersections with associated control networks. There are also the associated labour and other costs for operations, maintenance, and cleaning of the stations; of policing the dedicated lanes; and of operating the technology of the system.

Table 1: Essential features of BRT. Adapted from ITDP (2016)

Feature	Description
Dedicated right of way	Traffic is removed from the path of buses with fully segregated lanes, typically separated from mixed traffic with a physical barrier. These lanes are at the traffic median, that is to say in the middle of the road adjacent to oncoming traffic.
Mixed traffic is prohibited from turning across bus lanes	Crossing the BRT route at a perpendicular cross-street is permitted, but not turning from a parallel lane across the path of a bus. As such buses need never wait for a car to turn.
Median boarding and alighting	Stations too are placed at the traffic median, so the bus need never leave the dedicated lane. This results in the distinctive design of BRT buses, with doors on the opposite side to a conventional bus whose passengers alight on the roadside.
Off-board fare collection	Accepting fares and issuing tickets (or checking electronic fare media) is done in the stations, allowing buses to stop only long enough for passengers to alight and board. This necessitates stations with access control.
Platform-level boarding	To speed up passenger alighting and boarding, steps to the bus are eliminated by raising the station platform to the level of the bus floor. Steps or ramps are used to access the platform.

These essential features of the BRT standard have been consistent since its first edition (ITDP, 2012). Prior definitions of BRT were less lean, including criteria about the extensiveness of the network, security and comfort of stations and vehicles, and branding (Cervero, 2013; Levinson et al., 2003; Wright and Hook, 2007). The ITDP previously (2007) distinguished between "full" and "lite" BRTs, primarily by whether the busway was fully segregated from mixed traffic. The 2012 and 2016 standards have moved those secondary features into a scorecard, based on which systems are awarded "Gold", "Silver", or "Bronze" marks of BRT quality. Beyond the

minimum standards, the sky is the limit. Automated Fare Collection (AFC) systems are typically treated as standard, as are Intelligent Transport Systems (ITS) that use GPS and telecommunications to track and coordinate buses and other operations. Beyond prohibition of other vehicles turning across the BRT lane, signalisation at intersections is usually overhauled entirely so that buses never meet a red light.

The BRT Standard is explicitly a branding exercise, although BRT is unpatented and the name enjoys no trademark. The Gold, Silver, and Bronze ratings and their predecessor categories of full and lite are pitched only secondarily as a way for governments to appraise prospective BRT projects. Rather, the Standard is designed in order to make policymakers aware "of the characteristics of the best BRT corridors and their ability to provide levels of service more typically associated with metro and subway systems" and to maintain "quality control" to prevent "modest bus corridor improvements being branded as BRT or key BRT components of planned corridors being omitted due to financial or political concerns" (ITDP, 2016, p. 6). In this way the ITDP, which has been involved in planning BRTs in Johannesburg, Cape Town, Addis Ababa, Cairo, Dar es Salaam, Kampala, Kigali, Nairobi, and many cities outside Africa, operates not unlike a franchisor, concerned closely with policing deviation from the brand (albeit with less success than KFC).

Jacobsen argues the Standard's aim is "to reduce mutation by emphasising the importance of BRT's central characteristics" (Jacobsen, 2021a, p. 62), and that it "supports the rapid mobilisation of BRT as the only sustainable transport solution for the Global South" (Jacobsen, 2021a, p. 83). Early versions of the Standard were integrated into South African planning:

> For the purpose of this requirement. a Bus Rapid Transit (BRT) System is defined as an integrated network of road-based public transport services that are contracted by a Government authority and which include exclusive use median lanes and enclosed median stations (with predominantly offvehicle fare payment) on trunk corridors, as well as defined feeder routes that integrate with the trunk services.[1]

This is not just a local eddy in a global process of policy circulation. Four of the nine members of ITDP's Technical Committee on BRT standards consulted directly on the planning and

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[1] File 8_03, 'National standards for BRT', 3 March 2008.

implementation of Rea Vaya, and by 2013 the committee had recruited Colleen McCaul, Rea Vaya's Project Manager and "local expert". Wood (2015a) argues that the authority of the Standard resulted in the Rea Vaya team prioritising its provisions over the needs, and facts, of Johannesburg.

"Best practice" is always a normative claim, but seldom explicit about its norms (best for whom? Best at what?). For the rest of this chapter and thesis when I refer to "global best practice" the scare quotes should be read as implicit: a key part of the process of policy circulation is manoeuvring to establish best practice, in large part by establishing who gets to keep the gates of that practice.

The story of BRT

As an object of global policy circulation, BRT functions in the ITDP's Standard and similar documents (including early documentation in Johannesburg, discussed below) as a "policy narrative" (Roe, 1994). Without applying Roe's full methodology, we can nevertheless see how BRT closely fits Roe's concept of policy as story.

The story of BRT begins in Curitiba, Brazil, in 1972, albeit with prologues including an American concept document in 1966 and an influential proto-BRT opened in Lima in 1971 (Wilbur Smith and Associates, 1966; Wright and Hook, 2007). In 1972, having rejected a high-modernist plan of mass demolitions and highway construction, and then a light rail system, a group of young technocrats led by a charismatic planner-mayor embarked on four decades of incremental improvements to the municipal bus service. These involved segregated median busways and a trunk-feeder system in the 1970s, off-vehicle fare collection, fare integration, and level access in the 1980s, and establishment of a metropolitan transport agency in the 1990s: all typical elements of BRT systems to come (Lindau et al., 2010). In parallel, median-busway systems were adopted in various developed and developing countries, the latter increasingly financed by the World Bank from 1975 (Wright and Hook, 2007).

The next major chapter of the story, in Bogotá, involves another charismatic planner-mayor launching a BRT in 2000, not as the product of incremental improvement but a single "big bang" transport reform. Despite the subsequent development of various other median-busway and otherwise BRT-adjacent systems, notably in Quito and Sao Paulo, in 2007 the ITDP maintained

that Curitiba and Bogotá remained the "only two truly 'full BRT' systems in the world" (Wright and Hook, 2007, p. 14). However when the BRT Standard was introduced, Curitiba was excluded from Gold status, which went only to Bogotá, Guangzhou, and Lima (Cervero, 2013). By 2005, when it was first told in South Africa, the story of BRT is of a technology developed in Curitiba, perfected in Bogota, and now available to South Africa prêt-à-porter.

It is difficult to overstate the outsized role that Bogotá, in particular, plays in discourses of global best practice around BRT. See for example Figure 1 below, from an internal document prepared by an international consultant to Johannesburg's BRT. It draws the shortest possible line between Bogota's TransMilenio and best practice. This was an extremely common manoeuvre among the international consultants on that project. As Wood says:

> the Bogota model is presented by policy mobilizers [...] as a universal policy fix appropriate within a wide variety of geographic and sociopolitical contexts to tackle problems related to urban sprawl, poverty, and inequality (2014a, p. 1239)

Figure 1: "Best Practice: BRT Business Structure", 2009[2]

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[2] Digital file, 'Draft Background Report for Critical Decisions Workshop Fall 2009', September 2009.

The charismatic planner-mayors of Curitiba and Bogotá, Jaime Lerner and Enrique Peñalosa respectively, are neither just colourful details nor subtext: the ITDP's BRT Planning Guide refers to them twice as "charismatic leaders" (Wright and Hook, 2007). They are intrinsic to the structure of the story, which is that of a development "folktale" wherein "a problem (often a 'crisis') is encountered; it will be 'solved', through the epic endeavour of a hero (the project/policy), who faces and overcomes a series of trials (constraints), and then lives happily ever after." (Gasper and Apthorpe, 1996, p. 9; citing Roe, 1989) The hero, here, is both BRT and—more explicitly than many policy narratives—its political champions. Their heroism is not subtext but text:

> *Peñalosa* [hero] suffered through one of *the lowest popularity rankings recorded by a Bogota mayor* [crisis]. However, subsequently, some-thing rather miraculous occurred. As Mayor's vision and projects came into reality, the public responded in quite a positive manner. With the *new cycle ways, the improvements in public space, and the TransMilenio BRT system* [epic endeavour], citizens could see the transformation of a city. By the time, Mayor Peñalosa finished his three-year term, *he ended with the highest popularity ratings ever recorded by a Bogota mayor* [solution].

> It is quite likely that a political official with less drive and passion for public space and sustainable transport would have reversed course at the first sign of *upset motorists* [trials]. Instead, the risk taken by Mayor Peñalosa to transform the city and the public transport system resulted in *significant political rewards and international fame* [happily ever after]. (Wright and Hook, 2007, p. 44, emphasis and [annotations] added)

This heroic epic has been recounted in many cities around the world by a dedicated group of praise poets, not least Peñalosa himself in a post-mayoralty career as a BRT advocate. This policy narrative would be directly mobilized to drive BRT's arrival into Africa, and explicitly so in South Africa.

1.4. The governance of African BRTs

The South African BRTs, Johannesburg's chief among them, are seminal examples of the broader circulation of BRT as a policy package into and through Africa. This section describes and discusses that broader process of policy circulation and the institutional agenda that coalesced out

of it. African BRTs, although mostly following Johannesburg's, represent a class of projects of which Johannesburg's Rea Vaya is a prominent case.

For much of the late 20th century both national governments and multilateral institutions in Africa focused transport planning and investment on roadbuilding (Mitric, 2013; Porter, 2007). By way of illustration, in the first 25 years of the World Bank's urban transport programme in Africa it funded a single infrastructure investment exclusive to public transport—a bus depot in Abidjan—and a single technical assistance grant for privatisation of a transport operator in Dakar (Mitric, 2013).

In the early 2000s Lagos undertook a major World Bank-funded infrastructure, regulatory, and institutional reform of public transport: the Lagos Urban Transport Project (LUTP). In 2006, the Lagos State Government commissioned a BRT feasibility study and shortly initiated a self-funded single-line system with World Bank technical assistance. The system is usually referred to as BRT-lite due to sharing lanes with mixed traffic for part of its route (e.g. by Kumar et al., 2012). The LUTP had already involved the establishment of the quasi-independent Lagos Metropolitan Area Transport Authority (LaMATA) to consolidate the highly fragmented governance of the sector, manage the infrastructure project in the short term, and assume increasing authority over regulation and planning in the longer term. As Cheeseman and Gramonte note, the World Bank had a pre-existing plan for transport reform in Lagos and insisted on LaMATA's establishment as "a professional, capable and meritocratic body that could be relied upon to oversee the introduction of a new bus network […] a technocratic enclave within the bureaucracy" (2017, p. 472).

This institutional model would characterise subsequent BRTs, planned or realised: the Greater Accra Passenger Transport Executive (GAPTE), Dar Rapid Transit (DaRT) and Dar Urban Transport Authority (DUTA), and Nairobi Metropolitan Transport Authority (NaMATA) were all established with World Bank technical support, to plan and (in some cases) deliver BRT systems (Mitric, 2013; World Bank, 2019, 2017a, 2017b, 2016). The only BRT project in Africa to be planned by existing institutions, outside of South Africa, is under the auspices of the Conseil Exécutif des Transports Urbains de Dakar (CETUD), established in 1997 as a pioneer example of the metropolitan transport agency.

The sui generis nature of these agencies is justified on the grounds of the urgency and complexity of the BRT project, requiring a high level of specialist capacity not to be found—or built—in existing institutions (Lindau et al., 2014; Poku-Boansi and Marsden, 2018). Their place outside of

the normal structures of urban governance is similarly by design. As Kumar et al. explain of La-MATA, they are not just outside of urban politics but as much as possible outside of politics altogether: "Without that political insulation […] it would have been very difficult, if not impossible for BRT Lite to have been implemented and then operated successfully." (2012, p. 28). Notwithstanding their espoused benefits regarding coordination of functions hitherto divided among fragmented legacy institutions, these institutions pull a key function of urban governance—transport—away from functions such as housing and spatial planning (Kumar et al., 2012; Lindau et al., 2014; Poku-Boansi and Marsden, 2018).

These new urban transport agencies share another key feature: their metropolitan nature. Their functional independence from existing municipalities liberates them from historical boundaries, allowing them to span the actual or aspirational footprint of the city. The metropolitan area governed by LaMATA covers 16 local municipalities: see Figure 2 below. Nairobi Metropolitan Area, per NaMATA, comprises five counties of which Nairobi City County is merely the densest urban core (Gitau, 2021).

Figure 2: The sixteen municipalities comprising metropolitan Lagos (Aliu et al., 2014)

In Dar es Salaam a metropolitan council was established in 2000 to coordinate five municipal councils, but suffered from lack of capacity or formal mandate (Andersson, 2015, p. 31). In 2008 the Dar es Salaam Transport Master Plan strongly recommended the strengthening of local control of urban transport through the establishment of a Dar Urban Transport Authority (DUTA). A sister institution, the Dar es Salaam Urban Development Authority (DUDA), would similarly

strengthen governance of the metropolitan area, under control of the municipal councils. Meanwhile in 2007 DART was established to build and operate Dar's BRT system, reporting upwards to the Prime Minister's Office for Regional and Local Government[3] (PO-RALG). When metropolitan governance returned to the policy agenda it was in the DART model: a presidential proposal for the establishment of DUTA under the auspices of the presidency. Apart from transport governance it would absorb both DART and the intermunicipal council under the name of Dar Metropolitan, responsible primarily upwards into national government albeit with municipal representation on its board. In the event, the metropolitan council was summarily dissolved in February 2021 with its successor institutions left largely unspecified.

This illustrates a set of typical dynamics with respect to the institutional aspect of BRT in African cities. DART was established in the midst of, but separate from, ongoing debates about governance reform, as an upwardly accountable institution with a metropolitan mandate. Well-financed and -capacitated, it became a model institution for a new approach to urban governance—one whose influence is clear, if not yet fully determined.

This is an example of infrastructural institutional reform, changing the structures of urban governance and the relationships between other institutions by means of a large transport project. There are direct costs in accountability and policy outcomes to this process of reform-by-project. Accountability is directed upwards, to national institutions whose electoral mandates do not correspond to the metropolitan areas under governance. This diffuses the constituency for the transport project (and resultant governance arrangements), diluting its potential direct benefits in accessibility and urban development with other concerns such as "national renewal, modernization, or prestige" (Klopp et al., 2019, p. 23).

Meanwhile the ostensible value of these new authorities for the coordination of urban transport governance is limited, or undone, by the fact that many aspects of transport and other sectors remain governed by legacy institutions. Transport gets (further) separated from spatial planning, and frequently split into new, high-status modes such as BRT to be governed by new agencies, and old, low-prestige modes such as conventional bus and popular transport to be governed, to the extent that they are, by the previous assemblage of institutions.

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[3] Now President's Office for Regional and Local Government.

In general, the trend across African BRTs outside of South Africa has been for them to lead these processes of partial metropolitanisation, either directly—with their implementing agency as a vanguard metropolitan institution—or as a shot in the arm to nascent metropolitan governance (Klopp et al., 2019). They are therefore a prime example of institutional reform-by-project, although the degree to which the project motivates the reform, or the reform motivates the project, is an open question for any given case. On the one hand, these institutions are often highly targeted at the delivery of BRT, at least at first; on the other, BRT is framed explicitly as a tool of reform:

> A side-benefit of a wholesale switch to BRT services is that it allows for an institutional shake-up. While traditional bus services are difficult to reform because of incumbent operators resist efforts to increase competition, inauguration of a wholly new type of transit, BRT, provides the political opportunity to introduce meaningful institutional reforms (Cervero, 2013, p. 30; citing Wright, 2011).

As a transport mode of growing significance, not to say emerging pre-eminence, among new transport projects in Africa, Bus Rapid Transit has received various treatments in the academic literature.

The only book-length treatment on BRT in Africa (aside from Wood, 2022 on South Africa) is Jacobsen (2021a, see also 2021b) on the technopolitics of Dar Rapid Transit (DART), Tanzania's BRT and an emerging example of best practice in Africa. Jacobsen argues for a "BRT-cracy" made up of a few key institutions, of which Enrique Peñalosa, ITDP, and the World Bank are most prominent, who have driven the production of BRT as a policy package and its circulation around the world. This BRT-cracy has constructed Bogota's BRT and the role of Peñalosa himself as the standout example of global best practice, and leverages this reputation to drive BRT uptake and insert itself into policy processes among receptive countries. Despite the heavy involvement of ITDP and the World Bank, and the North American or European backgrounds of most of the BRT-cracy, BRT is treated as a policy product of the Global South and builds appeal based on discourses of "South-South" policy transfer. This is a more thorough and critical treatment of this South-South transfer than Wood (2015a) or Harrison (2015) on these processes in South Africa.

Jacobsen draws directly on Rizzo's (2015, 2017, 2018) studies on DART and the global political economy of BRT. Rizzo describes the "BRT evangelical society"—roughly equivalent to Jacobsen's BRT-cracy—as building and benefiting from the increasing adoption of BRT through consulting fees, development grants, and supply contracts. BRT here is part of global trends towards Public-Private Partnerships in transport and in the specific political economy of Tanzania. DART represents a shift from "roll-back" neoliberalism to a more interventionist form, where state resources are dedicated to actively managing social contradictions and to producing private profits. In contrast Paget-Seekins, writing not specifically on Africa, argues that "BRT does not necessarily have to be a neoliberal proposition" (2015, p. 116), albeit while identifying actually-existing BRT as implicated in the building of a global market in bus operations and in the ultimate aspiration of elimination of public subsidy for buses.

Beyond these, the literature on African BRTs largely avoids the questions of governance and political economy. Poku-Boansi and Marsden (2018) is one exception, focusing on BRT as a mode of governance reform. They argue, based on BRTs in Nigeria, South Africa, Tanzania, and Ghana, that BRT implementation requires substantial state capacity, and that reform to build such capacity is a requisite for BRTs. This thesis agrees, but inverts the analysis: BRTs may require governance reform, but governance reform may indeed require BRTs.

Klopp et al. (2019) pick up on the question of African BRTs as public transport reform, showing how they are associated with new, metropolitan-scale governance institutions, which (outside South Africa) have had the result of displacing elected local governments and extending national control into urban public transport. This "metropolitanisation" of transport governance is clearly visible in the case of Rea Vaya.

The cities in Africa where BRTs have been planned or implemented all have significant numbers of "informal" private transport operators. Setting aside the arguable usefulness of the formal/informal distinction, the BRTs have all included elements of formalisation, usually in the incorporation of incumbent operators as operators of the BRT. Asimeng (2021) and Asimeng and Heinrichs (2021) examine these processes of inclusion and identify operator resistance to regulation as a major challenge. Flores (2016; see also Flores and Diaz, 2018) argue that these attempts at formalisation reflect the fact that BRT is a tool for institutional reform, in the form of negotiated re-regulation of incumbent operators.

Among the only studies of the actual implementation of BRT, aside from Jacobsen (2021a), is Asimeng (2022). Asimeng argues, based on the cases of Lagos and Accra, for incremental implementation of BRTs, starting with the necessary institutional reforms, proceeding through reform of incumbent operators, and eventually building BRT infrastructure. Although this thesis proposes no such model itself, Asimeng's argument will be supported by the arguments to come.

Much of the other literature on BRT in Africa involves technical approaches to impacts, costs and benefits: examples include Chengula and Kombe (2017) on Dar es Salaam and Okagbue et al. (2015) and Adebambo and Adebayo (2009) on Lagos. These belong to the techno-managerial side of infrastructure research (Cirolia and Rode, 2019). Although valuable, they take for granted the answers to several questions that this thesis will pose and try to answer, such as the purpose and nature of major transport projects, and how to think about their success or failure.

As this study will show, Johannesburg followed a different path, as did other cities in South Africa: metropolitanisation was a more deliberate, deliberative, and thorough—but not uncontested—process that formally preceded the BRT, which then became a means to consolidate the institutional reforms of the newly-metropolitan City of Johannesburg.

1.5. Rea Vaya: what we know

Sometimes a bus is just a bus

In the first analysis Rea Vaya is a transport project, and as such has received significant academic attention as Africa's first full Bus Rapid Transit (BRT) project (launched soon after Lagos' BRT-lite). It is as a bus system that the most has been written about Rea Vaya, particularly regarding the arrival of the BRT concept in Johannesburg and the subsequent planning of the system. An early reference to BRTs is made by Walters (2008), limited to a paragraph in a broader overview of commuter bus services. This area is most thoroughly covered by a series of articles by Wood on the mid-to-late 2000s epidemic of "BRT fever" (Wood, 2014b) in South Africa. Wood describes:

    a. the study tours and "policy tourism" by South African officials to Bogota and other South American cities (Wood, 2014b);

b. individuals and other actors responsible for circulation of BRT and "localising global practice" (Wood, 2014a);

c. domestic politics of competition among cities and policymakers in South Africa and its effect on BRT adoption (Wood, 2015b);

d. why Latin American models of BRT were favoured, instead of African and Indian alternatives (Wood, 2015a); and

e. "multiple temporalities" by which BRT was imported (Wood, 2015c), arguing that it happened in fits and starts, variously gradual and rapid.

Wood (2022) is the only book-length treatment of South African BRT to date. This, too, focuses on processes of learning and policy circulation, without engaging closely with details of implementation or institutional politics. The importation of BRT has also been situated in a broader picture of south-south policy circulation by Harrison (2015) who describes a shifting relationship of Johannesburg with global best practice as part of a turn "southwards". On the actual policy design of Rea Vaya, Allen (2011) and Seftel and Peterson (2014) both describe some of the design choices but offer little on the process or institutions involved. Allen (2011) also has some descriptive detail on Rea Vaya's finances.

If this area of literature is lacking, it is in political economy and institutional analysis. Without denying the sociological and political processes of policy circulation, there are nonetheless significant interests involved in policymaking, especially around capital-intensive projects. As Rizzo (2017), Klopp et al. (2019), and Jacobsen (2021a, 2021b) show, BRT projects are enmeshed in both global and national processes of capital circulation and accumulation, not to mention simple patronage. These processes run through and are shaped by institutional structures, and these questions of institutional political economy in matters of design and implementation remain largely unaddressed.

One exception to this institutional and political-economy gap is on the taxi question. A large proportion of Johannesburg's commuters are served by an informal, unevenly institutionalized, and fiercely competitive minibus taxi industry. An early decision was taken to incorporate the taxi owners and operators into the new BRT system, and this choice and particularly the process of negotiation has been well-documented and -analysed.

For example, McCaul and Ntuli (2011) is an account of the negotiations, written from the perspective of City representatives. They provide granular detail on the course of those

negotiations, although little analysis. Allen (2011) and Gauthier and Weinstock (2010) provide additional empirical detail on the negotiations. Woolf and Joubert (2013) offer a history of the industry and account of its institutional political economy, arguing that whatever success was achieved in negotiations was due to the state engaging directly with owners and operators and bypassing the industry's powerful institutions of self-governance. Venter (2013) offers a structural analysis, arguing that the political economy of the industry at the time, and approaching limits to its profits, were as much of a "push" towards involvement in the BRT as the state's agenda was a "pull".

One opening left by the literature on the negotiations with the taxi industry is on the question of formalisation. Some of the literature frames the Rea Vaya project as one of formalisation of the taxi industry (e.g. Gauthier and Weinstock, 2010; see also Schalekamp and Klopp, 2018; Venter, 2013). The project itself put "transformation" of the industry, really just formalisation by another name, as a core objective. Witting and Wegner's (2016) strict new institutional reading argues that it was the existing institutionalized (if not formal) structure of the taxi industry that made negotiations possible in the first place.

Another area that has received academic attention has been the outcomes of the project. Vaz and Venter's (2012) survey found that two years after launch Rea Vaya had not significantly improved accessibility of work and work opportunities, but it did serve other trips better than alternatives. Rea Vaya had not increased spatial access as it served routes already served by other modes; however, it improved temporal access by running more consistently than other modes. It also reduced the cost of commuting for many users, but remains more expensive than alternative modes—especially rail—which explains why it appears not to serve the extremely price-sensitive poor despite offering a higher quality service.

This finding is reinforced by Venter et al. (2013), who review the theory and methodology of assessing equity effects of BRTs, and Venter (2016): the existence of cheaper alternatives along the trunk routes, especially rail, mean that the price-sensitive commuters who make up most of the intended and potential market for Rea Vaya will not use it; only a small percentage of passengers can and will pay for shorter journeys. Venter (2016) notes that this is a potentially fatal flaw in the model: a BRT by its nature prioritises shorter journey times over almost anything else, including cost. If most of the potential riders are journey time-insensitive but price-

sensitive, then they cannot be attracted by shorter journeys (as Rea Vaya offers) but only by the lowest possible prices (which it does not).

Bickford's (2015) survey at Diepkloof Rea Vaya station found that the introduction of the BRT increased accessibility and mobility for users and reduced demand for local taxis; there was an ambiguous effect on economic activity and land-use change. A survey around 10 Rea Vaya stations by Mbuyi (2016) found that the BRT had little effect on mobility; mixed results on travel affordability; positive effects on perception of infrastructure, services, and amenities; and little effect on land value, densification, or use-diversification around the stations.

In one of the few high-level analyses of Rea Vaya's operations, Scorcia and Munoz-Raskin (2017; see also Munoz-Raskin and Scorcia, 2017; Munoz-Raskin, 2017) find that Rea Vaya's low ridership and poor financial performance are largely predicted by Johannesburg's spatial form and travel demand patterns, and the correspondingly poor fit of the Latin American-derived system design and operational model.

Harber and Bryer (2020) consider the question of financial sustainability and conclude that, while the cost-recovery rate of Rea Vaya is low, this was largely to be expected—and to a large degree *was* expected. Subsequent political challenges on the basis of cost were largely the result of early un-evidenced claims, primarily by prospective consultants on the system, that the system would not require operational subsidy; and subsequent poor management of expectations. These claims have been deployed by political opponents of the project, most particularly in Gauteng Provincial Government.

The question of ridership numbers is more challenging. Whereas the expense of the system was known (at least to some) long in advance, ridership levels were expected to be much higher (Van Rensburg, 2017). Venter (2016) argues that ridership forecasts and models based on high elasticity with respect to journey time are consistently likely to overpredict demand. Complicating the question is the fact that there is significant uncertainty regarding actual ridership: the ticketing system is at best uneven, at worst non-existent, and it is likely that, but unknown how much, the official numbers understate ridership. To the degree that actual ridership *is* lower than expected, and to the extent that those expectations were not wholly unrealistic, it is likely that the gap is partly the result of ongoing competition with minibus taxis along Rea Vaya routes. Despite the City's paying a significant restraint-of-trade payment to taxi operators, trade

is unrestrained. What is clear is that the designed limits on competition with Rea Vaya are not enforced.

Many evaluations have centred on questions of ridership and mobility, and to a limited extent land-use and densification (in Bickford, 2015; and Mbuyi, 2016, above). Rea Vaya had so many objectives attributed to it over years of concept, planning, and implementation, that even the question of what it was trying to do is a confused one. There have been various studies trying to quantify environmental or economic outcomes of the Rea Vaya (see for example Seftel and Peterson, 2014), but it seems no comprehensive evaluation, or even definitive statement of what should be evaluated.

Molefe and Vanderschuren (2021; drawing on Bruun and Vanderschuren, 2017) undertake a "triple bottom line" assessment of Phase 1A and 1A of Rea Vaya, integrating social and environmental benefits into a standard cost-benefit. They find that Rea Vaya has a marginally positive ratio of benefits to costs. However this exercise depended on a relatively small survey of riders, was constrained by data in other ways, and uses measures designed to be generic to transport projects rather than a specific assessment of Rea Vaya. As such, what one might think is a straightforward question—does Rea Vaya work?—is nothing of the sort, and represents a significant gap in the literature.

In all, some aspects of Rea Vaya as a transport project have received more academic attention than others. The policy processes that brought Latin American BRT to South African has been well-covered, as has the question of Rea Vaya's outcomes for riders and urban development. However the actual process of planning and implementation, beginning with Rea Vaya's adoption and ending with the operation of the first buses, remains largely unexamined. One partial exception is the negotiations with the minibus taxis, which have received some attention. As this study will show, this lack of attention is not because the planning and implementation process was smooth; on the contrary, the details, conflicts, and political economy visible throughout the process deserve a close and careful analysis.

…except when it isn't.

Aside from being a project in its own right, Rea Vaya represented part of a project of reform of the urban state in South Africa. Rea Vaya was initiated at a particular political, economic, and

institutional conjuncture, one that shifted dramatically over the period of implementation. This has been unevenly and, I argue, inadequately addressed in the literature.

Walters (2014) describes the institutional environment in which public transport policy is made and implemented. He focuses on conventional buses and situates BRT in that context but has little to say about Rea Vaya itself. Jenkins (2012) is a cursory analysis of "institutions and actors" involved in the BRTs in Johannesburg and Bogota. Kumar et al. (2012) engages with institutional questions in a comparison between BRT case studies in Johannesburg, Lagos, Jakarta, Delhi, and Ahmedabad, but is limited by, for example, treating the state as a unitary actor. It also contains various significant factual errors that that undermine its otherwise straightforward argument that implementing BRT requires political champions, a good communications strategy, and high levels of service. For example it claims that the team responsible for Rea Vaya say within the Johannesburg Roads Agency; it characterises Clidet, the Special Purpose Vehicle that operated Phase 1A on an interim basis, as simply a private operator; and claims some sort of split ownership of "Rea Vaya" between the operating company Piotrans and the City. These are all elementary errors that reveal serious confusion over how Rea Vaya is structured and operates; and indeed over its very nature.

Dibakwane (2011) reports primary data from various constituencies involved in the BRT including unions, industry organisations, and government, but frames it as an actor analysis between unitary institutions, flattening the highly variegated institutional landscape that I intend to explore. He concludes that the BRT suffered for lack of policy and process certainty in its development; from a "top-down approach to engag[ing] with stakeholders" (p. 111); and tight timeframes. This is all reasonable, but neglects questions of *why* each of these should have been the case.

Rea Vaya was a product and a part of simultaneous movements in the City and national governments. On the side of national government, elements of this context included: a fiscal loosing derived from strong economic growth, a tax windfall, and a reconfiguration of the fiscal distribution between national and local governments; growing consensus on the importance of urban policy and particularly transport reform; and the awarding of the soccer World Cup to Johannesburg necessitating large and flashy infrastructure investment. Rea Vaya has not been academically located in this context with the partial exception of the World Cup.

On the side of the City there is a little more. Götz et al. (2011) are focused not on Rea Vaya but on the formation of the City of Johannesburg. They unusually and importantly situate Rea Vaya in the process of institutional change from which Johannesburg had emerged, arguing that the establishment of this metropolitan institution is and was a necessary condition for Rea Vaya. Along this line of enquiry, the particular urban and governance arrangement of Gauteng—of three adjacent metropolitan local governments in a "city-region" broadly corresponding to the provincial boundaries—allows us to problematise "metropolitanisation" as a teleological concept (similarly to "regionalism": see Söderbaum, 2015). What we see in the parallel reforms of Johannesburg and Gauteng (and other city-region institutions) is simultaneous projects of metropolitanisation happening at different scales. As Götz et al. (2011) show, one process of metropolitanisation proceeded from institution (City of Johannesburg) to transport project (Rea Vaya). As Börger (2018) argues, another is in the process of proceeding from transport project (Gautrain) to institution (Gauteng Transport Authority).

Largely missing thus far is the Gauteng Provincial Government, about which little has been written with respect to Rea Vaya. The Province exercised regulatory control over crucial aspects of Rea Vaya's implementation, and controlled existing provincial bus services whose involvement was a major sticking point for Rea Vaya. More broadly, Rea Vaya represented the first major challenge to the established fiscal order, whereby provinces acted as gatekeepers for flows of project money from national to local government. This was envisaged, at least by some, to be the beginning of a shift to greater fiscal autonomy for the largest cities: there were already policies in place for progressive devolution of housing and eventually of transport. These policies ran aground on, inter alia, petty party politics: opposition-controlled Cape Town was in the lead to gain the devolved housing function. However the appropriate division of fiscal, oversight, and other roles between government spheres remains an active debate in various sectors (including transport) and the empirical question of how the Province interacted with a key devolved project—Rea Vaya—is important and largely absent from literature on Rea Vaya.

There is, overall, very little written about the institutional shifts within the City of Johannesburg, or between the City and other institutions such as Gauteng Province or the National Government, as relate to Rea Vaya. These institutional shifts certainly happened, but they remain largely without attention in the academic literature. This is the major empirical gap that this thesis sets out to fill.

1.6. Method

Like the drunk looking for his keys below the streetlight, my selection of both the case of Rea Vaya and the in-depth qualitative examination of it were primarily the results of where the light was shining. The late Colleen McCaul was the long-time project manager of Rea Vaya who led it through planning and implementation of Phases 1A and 1A. In an interview for another project, Colleen's life partner Neil Hickson made me aware of and later gave me access to her person archive of the project. This took the form of 41 lever-arch files and a hard drive of digital files.[4]

This archive was extraordinary in its depth and completeness, including seemingly every draft of every document that passed through the project manager's hands as well as meeting agendas, minutes, correspondence between and amongst officials and consultants, and Colleen's personal reflections, formal and informal. As thanks for Neil's generous gift of access, I prepared the archive for accession to the Historical Papers department at the University of the Witwatersrand Library, where at time of writing they are being processed.

When it comes to empirical detail, particularly archival data, quantity has a quality all its own. The question was how to make best use of this trove of data. An in-depth case study offered the best opportunity to present the richness of empirical detail on Rea Vaya, of which very little existed in the academic or popular domain. Rea Vaya's prominence in South African policy and politics, and the recent history of Johannesburg, meant that presenting an analysis of this information was almost self-justifying. Furthermore very few transport projects, or indeed state projects, are ever examined and presented with this degree of detail and based on this extent of evidence. Doing so allows the reconstruction of a project and its decisions more in the context and order in which they happened, exposing later rationalisations and justifications (innocent or cynical) and making it much easier to establish the whys and wherefores.

However this is not just about Rea Vaya. From the beginning I wanted to be able to shed light on how major transport projects work, the implications of their implementation, and their relationship to the state. These are the "class of events" that this case study speaks to (George and

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[4] The hard drive was not limited to Rea Vaya but included invaluable information from Colleen's other work as a transport consultant, much of which was relevant to this study. The lever arch files all concerned Rea Vaya.

Bennett, 2005). This is not to claim that Rea Vaya is typical of such projects, or that its lessons are directly transferable to others. Rather, my aim here was to use the depth of empirical detail to establish some of the necessary internal conditions of the class, to identify causal mechanisms within Rea Vaya, and to illustrate them in a way that useful insights might be carried beyond it (Gerring, 2004). The concept of urban statecraft, described in the next chapter, is meant to apply much more broadly: the case of Rea Vaya shows how it works and how it may be applied to other cases. Thus if research can be exploratory, descriptive, or explanatory then this study endeavours to be all three (Makri and Neely, 2021). It is exploratory of a newly available archive of presumed, but unproven, significance. It is descriptive of a case, the implementation of Rea Vaya, with relevance to transport and infrastructure projects in South Africa, across Africa, and potentially further afield. And it is explanatory of the outcomes of Rea Vaya and the nature of projects like it.

Rea Vaya inspires both vociferous criticism and passionate defence; in my observation this tracks reasonably closely with whether the speaker supports Gauteng Province's project of metropolitanisation, or that of the City of Johannesburg. On starting this project I would have said my sympathies lay with Rea Vaya and those who implemented it. Nevertheless it seemed to me from the start that the most interesting approach would be conducted with "soft eyes", working through the data to establish what happened, at a minimum, and hopefully start making sense of it. I therefore come neither to praise Rea Vaya, nor to bury it.

This accords with the spirit of grounded theory, whose central precept is the taking the subject of one's research on its or their own terms (Corley, 2015; Glaser, 1998). From the start, grounded theory has recognised the research value of a "cache of documents", which I certainly had (Glaser and Strauss, 1967). There is some disagreement on how doctrinaire grounded theory research must be about the specific sequence of methods, but the nature of this project and the need to adjust plans due to the Covid-19 pandemic demanded I take the side of the "cooks" rather than the "bakers": drawing on the techniques as tools, rather than rigid recipes to be followed (Corley, 2015).

From the 41 lever-arch folders that formed the core of my data, I first read them all once through, physically tagging specific documents for later attention. These tagged documents I scanned and processed through optical character recognition (OCR) software, producing 1 094 individual documents of many more pages in total. As the original files were already well

collated, I kept their digital scans organised in folders corresponding to their original lever-arch files. Keeping this folder structure, I loaded the documents into Nvivo, a qualitative research software tool frequently used for grounded research. I then processed each document individually by hand, producing a book of 134 codes. I created codes from emerging themes in the documents, informed by my research questions. These coded documents formed the core of the research data, and their prominence is reflected in the footnotes throughout the thesis. They are represented as follows:

File aa_bb, Descriptive title, date.

Where aa is the folder number, bb is the document number within that folder. The descriptive title, where it reflects simply the printed title of the document, is in quotation marks. Otherwise it is my description. The date reflects the greatest accuracy possible: sometimes to the day, sometimes the month or only the year. Where I have had to infer a document's date based on its contents or position in a file, it is marked with "c." (circa). Many documents are not explicit about their authorship or readership, being internal to the project. Where they are, or where I can infer with confidence, I have included that in the description of the document or its title.

Together with the physical files I had over 6 gigabytes of digital files from the same source, comprising some 24 000 individual files. In addition I was granted access to approximately 6 800 digital files from other sources—who requested strict confidentiality—comprising mostly government documents. These were not as consistently relevant to Rea Vaya as the documents from Colleen McCaul. These digital caches were too large to sift through by hand, so I used a less structured approach to them in order to fill gaps left by the physical files. This was a combination of keyword searching, reading through entire folders of particular relevance, and in many cases dumb luck when falling upon a particularly useful file. These files are represented in footnotes as

Digital file, Descriptive title, date.

My original research plan included a greater role for interviews. I had conducted a handful when South African entered its first national lockdown due to Covid 19. It remained locked down to varying degrees for months, and on and off for nearly a year. The increased challenge of securing and conducting interviews, combined with just how many documents I found myself dealing with, both pushed and pulled me to draw almost entirely on a documentary evidence base for

the study. Those interviews I conducted, and which are cited in the thesis, were nevertheless invaluable for filling specific gaps.

Colleen's position in the Rea Vaya project, and later working for the National Department of Transport looking back at Rea Vaya, means that the vast majority of project documents passed through her hands, regardless of their author. Her professional and personal disposition was such that she filed these documents meticulously, often with her own reflections appended. Most memos and reports are represented in multiple drafts, often with background data or models included. Nevertheless relying so much on a particular source of data may pose risks for a research study. I have tried to mitigate those risks by paying attention to cross-references between documents and gaps in timelines, and found no reason to doubt the completeness of the archive. At some point, however, I had to just trust Colleen: the fact that this was her personal archive, that it both pre- and post-dates the project, give no reason to believe she would be systematically selective with her filing. Her sudden and premature death, at the peak of her career, similarly gives no reason to believe that she curated the archive for other eyes.

Nevertheless, this remains a study closely tied to her positionality. Although she touched and seemingly filed every document generated by the Rea Vaya project and many more besides, the scale, scope, and significance of the project for Johannesburg and South Africa both meant that many more institutional actors engaged with the project in various ways, not always supportively. Chapter 3 briefly discusses how the City's finance department engaged with the Rea Vaya's business planning, and Chapter 6 is dedicated to how various national and provincial institutions engaged in statecraft over Rea Vaya. These are however told largely through the record left in Colleen's files—although other digital archives are credited accordingly. Where emails and reports from these other institutions made it to Collen's archive, they are cited; but there is no question that they generated much internal discussion both formal and informal, and those perspectives are simply absent here. Even more profoundly absent are the many institutions who may not have engaged the Rea Vaya project directly—so as to appear in the archive—but whose work affected and was affected by Rea Vaya; some of which were undoubtedly engaged in projects of statecraft themselves. I am thinking here especially of the other departments of the City of Johannesburg such as spatial planning and housing, from which perspective no doubt another thesis could be written on the topic. This however is the data, and therefore the thesis, that we have.

The other positionality this thesis cannot escape is of course my own. In 2014-15 I was employed as a full-time consultant for the Government Technical Advisory Centre of the National Treasury. This was a sort of internal consulting service which would respond to requests from other departments or organs of state. Half my time was spent on a number of projects for the Department of Human Settlements, the City of Johannesburg, and others, many of which dealt with matters of organisational development and management. The other half of my time was contracted by another Treasury unit called the Cities Support Programme (CSP). The CSP existed to promote a specific spatial agenda, with accompanying reforms to planning and budgeting, in the cities—often in a consulting capacity. This was part of National Treasury's entry into urban policy, discussed in Chapter 6. In 2016 I joined the Gauteng City-Region Observatory (GCRO), an independent academic institute funded by the Gauteng Provincial Government, nominally to inform evidence-based policymaking in the province but no less as a foundational institution of the Gauteng City-Region—which will also make an appearance in Chapter 6 as Gauteng's competing project of urban statecraft to that of the City of Johannesburg.[5] As such I have been at least twice over an actor, or rather a bit-player, in institutions studied here. These experiences and others consulting for and generally hanging around the South African state has given me direct sight of the complexity and conflict in the South African state; experience that is reflected in the theory of urban statecraft and this thesis more generally.

1.7. Onwards and upwards

This chapter asked: Why transport and the state? Why BRT? Why Rea Vaya? and why archival case study research? The answers were that: Transport and the state are intimately linked, if not mutually constitutive. BRT as a technology of transport and of state reform is popular in Africa and further abroad, and tied into global processes of policy circulation and capital accumulation. Rea Vaya is not just the first of Africa's full BRTs but relatively un-examined in its institutional details and significance. And a deep dive into the specific case of Rea Vaya, based on an

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[5] I am still a Research Associate of the Gauteng City-Region Observatory. I met Neil Hickson, learned of Colleen's archive, and developed my original research proposal while employed at GCRO. I also made use of an office there during my fieldwork. This thesis was not otherwise supported by GCRO, and no part of it has yet been read by anyone there.

extraordinary documentary archive, allows the closest scrutiny not only of the project as it is, but as it unfolded over time.

We can now consider the chapters to come. Chapter 2 introduces the concept of urban statecraft as a theoretical basis for the study. It then deploys it in a 100-year history of South Africa's urban and transport governance to show that indeed transport infrastructure and the South African state have been tightly bound from the very beginning, not least in the formation of today's Gauteng Province and City of Johannesburg. Rea Vaya is simply the most recent articulation of a long history of institutional statecraft.

Chapters 3, 4, and 5 each tell parts of the story of Rea Vaya. Chapter 3 discusses Rea Vaya's origins and planning, locating both in the institutional form and nature of the City of Johannesburg. It then turns to the planning and implementation of a single aspect of the project, the Intelligent Transport System, to show the dramatic and immediate effects of this institutional form. Chapters 4 and 5 examine the project's conflictual engagements with incumbent transport operators: the minibus taxi industry, and a major legacy bus operator respectively. These show and analyse urban statecraft as a dynamic not only amongst the institutions of state, but reaching beyond the at times indeterminate boundaries of the state into its parastatal partners. Using urban statecraft we can understand these conflicts as not only negotiated re-regulation of the incumbent operators, but a fight over the form of the state at its boundary made up of publicly-funded, privately-provided services (c.f. Dewey, 2016).

Chapter 6 turns to the more clearly internal institutional politics of the state, as visible through Rea Vaya. The national and provincial governments—and parts thereof—played out their own institutional agendas with respect to and through the project. Variously the National Treasury, National Department of Transport, National Presidency, and the Gauteng Department of Roads and Public Transport wielded Rea Vaya as a tool to reshape the state for their purposes, using the levers that they respectively controlled; again, urban statecraft by means of infrastructure.

Chapter 7 then turns to some of the implications of this reading of institutional politics. Much of this hinges on the question of success: Chapter 7 examines the difficulty of using the term uncritically with respect to a state project, and the undesirable implications of the typical approaches. Furthermore, even accepting an uncritical definition of success—such as ridership—turns out to present potentially insurmountable practical difficulties. It shows this with relation to Rea Vaya: it has not been possible, for nearly ten years, to say with confidence how many

people use the system. The chapter then links this argument back to urban statecraft by show-ing that institutional reform—that is, success in reshaping the state—is a necessary component of how we should understand project success. It examines Rea Vaya in these terms, by showing the City and its constitutive actors' institutional agendas in the project, and concludes that by this measure, Rea Vaya cannot be called a success.

The thesis concludes by examining some of the implications of this analysis in terms of urban statecraft. These include academic implications, such as the importance of closer study of the working mechanics of the state and the projects the state undertakes; and policy implications, with relevance to the better design of major infrastructure projects.

## 2.	Transport, the state, and the city[6]

This chapter is a theoretical reading of the spatial and transport history of South Africa, narrowing stepwise from South Africa, to the area now defined as Gauteng Province, to the City of Johannesburg. First, it will engage with and extend the concept of "urban statecraft", as discussed in Cirolia and Harber (2021). This theoretical approach is focused on the relationship between the undertakings of the state such as policies, regulations, and projects and the institutional agendas encoded within them. It will then put the theory to work with a brief history of the South African state and its spatial and transport undertakings. It will show, through this history, that as the South African state developed it was done so in no small part to deliver the transport projects of the state, and partly by means of those very projects—as described by the theory of urban statecraft.

It was through this iterative and incremental process that the contemporary South African state developed; through successive, overlapping, or openly conflictual institutional and policy agendas. The purpose of the chapter is to establish the long history of urban statecraft in South Africa, engage with the infrastructural origins of Gauteng province, and ultimately deliver the analysis to the moment of the establishment of the City of Johannesburg—itself a straightforward act of state- and scalecraft (on which more shortly). The chapter therefore lays the foundation for the thesis by way of preparation for the argument to come in later chapters. These will not only deploy the concept of statecraft but also show in much more granular detail how integral Rea Vaya was to processes of statecraft in Johannesburg and South Africa.

### 2.1.	The state and how we study it

As noted in Chapter 1, this study is informed by the concerns of the new institutionalism and especially by the regulation approach. Chief among these concerns is the institutional puzzle that is the state. This section is a theoretical sketch of the state, situating statecraft in various traditions of state scholarship.

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[6] This chapter draws and expands on the theoretical work of Cirolia and Harber (2021) and historical work prepared by myself as background for Klopp, et al. (2019).

The core insight of new institutionalism is that institutions matter. When March and Olson (1989) rediscovered the institution, it was as an entity in its own right rather than just a container in which rational actors acted rationally. Institutions do work, channelling and regularising human activity, frequently constraining it, and most importantly generating and exercising power. March and Olson led the new institutional counterrevolution with normative institutionalism: theorising institutions as crystallised ideas, portraying a logic of appropriateness that leads people to act, not out of rational concern for the own interests, but in keeping with the norms of their institutional situation.

Regulation theory arose outside of this tradition. Concerns to explain the crisis of the 1970s led to the question of how capitalism survives despite an inherent propensity to accumulation-threatening crisis (Aglietta, 1979; Lipietz, 1987 quoted in Jessop, 1988). Existing approaches concerned with "with the economic mode of economic regulation" (Jessop, 1995 p. 316), were inadequate to explain either the stability of the system, nor its periodic rupture. Their answer was that the specific regime of accumulation is stabilised by a corresponding mode of regulation, that is to say an institutional complex serving to stabilise the system and forefend crisis. This stabilisation could only ever be partial and temporary, with the mode of regulation having to continuously adapt to the point of constant institutional change, and periodically failing and being overwhelmed by crisis.

What is notable is that regulation theory begins from a theory of institutional assemblage. While the state is one of the key "institutional forms" (Boyer, 2002) to be analysed for any given mode of regulation—with the wage-labour nexus, the form of competition, mode of insertion in the global economy, and the nature of money—regulation theory is an explicitly neo-Poulantzian approach. As such it has no attachment to the formal boundaries of the state or the relationship of any given institution to the fiscus. Just as Poulantzas (1969) considered the state to encompass both the repressive and the ideological institutions of capitalism—the police and the church, taxman and teacher—so regulation theory allows, indeed demands, that we analyse any and all institutions for their role in maintaining the social and economic order. An example of this will be the argument I make in Chapter 5, where I explicitly call the privately-owned bus company Putco (Pty) Ltd an institution of the state.

It may go too far to say that if everything is the state, then nothing is. But if every institution is potentially part of the state then—bearing in mind the necessarily partial and temporary

effectiveness of the mode of regulation—we must be able to talk about the internal relations of the state as existing in something other than perfect unity. Here, urban statecraft will go further than many accounts of regulation theory by explicitly disaggregating the state to show the contradictions and contestations within. Indeed central to the analytic of urban statecraft is that actors within the state—either institutional or individual—jostle for position within the state, simultaneously trying to seize and rebuild it, through the means of policy.

Accordingly the discussion of urban statecraft, below, will show that unitary state is something of a mystification, obscuring the ubiquitous contestations within over policy and especially institutional arrangements. The uneasy compromise here and elsewhere in the thesis is to carefully pick apart the actors and forces at play when needed to show the contradictions of the state, but to refer to the state simpliciter when those contradictions are less important to understand the matter at hand.

Having borrowed the regulation approach to ground statecraft, I will be returning it along with interest. The regulation approach is most thoroughly developed with regards to the structural analysis of institutional change. What statecraft offers is an account of institutional reproduction and elaboration both as projects in themselves, and as by-products of other projects. Without claiming to be a fully-developed agentic approach, statecraft can nevertheless give agency a foothold in the otherwise structuralist regulation approach.

There are other theoretical approaches to the state that bear mentioning. Migdal's (2001) state-in-society approach has much in common with the regulationist-statecraft story above. He "depicts society as a mélange of social organizations" (p. 49). His state, which is not unitary, is composed of institutions which may have their own agendas within and without the state, and to that end may align themselves with other organisations—"Families, clans, multinational corporations, domestic businesses, tribes, political parties, and patron-client dyads" (p. 50)—who pursue agendas of their own and exist in symbiosis with the state. The coherence of the state, therefore, cannot be assumed. What is assumed by Migdal, however, is the agenda of each actor in this system, state- and not-. The stakes are always social control of the population, which is "the currency for which social organizations compete" (p. 51) and non-state actors "reject the state's claim to predominance, and they too directly seek social control" (p. 52). The result is a sort of war of all against all, where alliances of convenience may be made between organisations within or without the state, whose war aims are always clear.

This goes too far. It assumes a universal impulse to universalise, suppressing the range of motive forces of society behind sheer will to power. It even, taken strictly, assumes away capital accumulation as a major concern except as a means to power over people. While we can often see capital engaging in deeply unprofitable behaviour rather than ceding any power to workers, it simply is not tenable to hold that profit holds no value on its own terms. There are more problems: If regulation theory may be considered overly functionalist, state-in-society is avowedly anti-functionalist. It is a wonder that his state-containing society doesn't immediately collapse; so too that any capital accumulation manages to happen. We must show theoretical care for both the ubiquity of crisis and the calm between—that is the usefulness of the regulation theory in which I am situating statecraft.

Finally Migdal, for all his decentering of the state and resistance to its teleology, only decomposes it as far as to say that parts of it may act against it, or at least in support of other social forces competing for social control. There is still something like a state, which exercises a greater or lesser degree of control at the apex of society. Statecraft goes further, insisting on a more profound decomposition of the state. Each institution, formal and informal, at every scale, may be oriented in any direction at all. State-in-society assumes the state and notes defections from it. Statecraft begins from the melange—as Migdal says—of institutions, and asks what if any whole is emergent therefrom. As such statecraft is both more anarchic and more empirically modest: one must look at each part of the state, and each part of each part as research time and resources permit, to determine its own internal relations, its own orientation and agendas, and its role in the emergent whole.

As for Mitchell's (2006) theory of the state, it is really a theory of demarcation of the state. He challenges the formal boundaries of the state, calling it "diffuse and ambiguously defined at its edges" (p. 169). What is much more defined is the ideological construct of the state, which carves society not at its joints but between institutions that nevertheless form a coherent, functional whole. The reason some form "the state" and some do not is because that distinction itself is functional to the system—and the drawing of that distinction is "the distinctive technique of the modern political order." (p. 170). The boundary of the state is not a property of the system, but a tool of it.

This, like statecraft, begins from the milieu—the melange. But its entire concern is the exercise of material and ideational power involved in delineating the state. That is an interesting

question, but not the question of this thesis or that of statecraft. Where Mitchell goes looking for the state/society divide and finds it to be an artificial one, statecraft studies these institutions' orientation to the whole notwithstanding which side of the divide they lie. Chapters 4 and 5 of this thesis will each look at a social institution whose delineation outside of the state is precisely the result of the artificial and power-laden process of delineation that Mitchell describes. But that leaves us exactly where analysis of the statecraft begins: with various institutions, playing various roles in the institutional melange and with multifarious interests and orientations. Mitchell shows us why they are nominally outside the state. Statecraft is about asking what they, and those institutions we are (perhaps arbitrarily) treat as within the state, are trying to do about it.

There is also no conflict in Mitchell. He is fundamentally a structural functionalist, assuming "social and political order" and asking what work is done by dividing its constituent institutions up into state and non-state. But no social and political order—we might say hegemony—is perfect and whole. Many such orders, including South Africa in the period here studied, are very far from perfect indeed. What statecraft draws from regulation theory is an acute sensitivity to contradiction. It is contradiction and conflict that inheres in the social world, and we have institutions to manage contradiction and conflict and produce coherence and order. But any such coherence or order is only partial and only temporary, and it is in responding to advancing contradiction—chasing cracks in the glass as it were—that institutions evolve, break, and reform.

Finally, there is the slightly nebulous body of theory broadly called "governance". Jessop locates governance in the convergence of diverse theoretical strands sharing a rejection of "the conceptual trinity of market-state-civil society" to understand social coordination (1995, p. 310). This rejection manifested as, for example, analyses of non-market institutions of economic coordination and of international "governance without government", and Foucauldian analyses of disciplinary "technologies of the self" (e.g. Burchell, 1992; Campbell, 1991; Krasner, 2004; Rosenau 1992; Storper 1993). What emerged was a broad insight that the state is not the only show in town: that the (formal) state is just one of the myriad institutions of social coordination and regulation. In this broad sense, regulation theory, statecraft, and this thesis are operating within the broad theoretical paradigm of governance, and especially the thematic area of urban governance. But where governance studies can sometimes err is in slipping from "the state is not all that matters" to "the state does not matter". The interest and utility in studying non-state actors should not distract from the fact that the institutional complex commonly called the state

remains collectively powerful even as it is riven by contradictions; power and contradictions that deserve study.

The next section will turn more closely to the question of urban statecraft and elaborate on how it will help us understand transport infrastructure in Johannesburg.

2.2. Urban statecraft

The concept of urban statecraft has its roots in Bulpitt's (1983) theory of statecraft. This focused on the actual mechanisms by which the state worked, "concerned as much with the 'how' as the 'what' of politics" (John, 2008, p. 5). Those mechanisms are focused on two ultimate aims of politics: winning elections, and the development of "governing competencies" by means of which the tasks of the state are executed (Bulpitt, 1983). Those competencies are enacted through institutional arrangements, as well as "specific relations, rationales, instruments and practices… introduced, socialised and embedded" (O'Brien et al., 2019a, p. 7) within the state.

More recent scholarship on statecraft has narrowed in on "municipal statecraft" or "city state-craft" specifically to describe the re-orientation and -structuring of municipal governments into entrepreneurial and financialised forms in the context of austerity (Lauermann, 2018; Pike et al., 2020). A key concern is the financing of infrastructure construction, and the interface between local governments and financialised systems of provision of infrastructure (Ashton et al., 2016; O'Brien et al., 2019a). Björkman and Harris focus specifically on the engineering of urban infra-structure, and the role of engineers, in "establishing and maintaining urban government through processes of territorialization, standardization and bureaucracy" (2018, p. 3)—a dy-namic that is clear particularly in the engineering of the province of Gauteng. Meanwhile, the concept of urban statecraft has been applied to South African cities to understand the changing role of fiscal transfers and resulting "fiscal geographies" (Cirolia and Robbins, 2021), and Cape Town's reorientation towards high-tech start-up driven accumulation (Pollio and Cirolia, 2022).

I follow Cirolia and Harber (2021) in using "urban statecraft" instead of municipal statecraft or city statecraft as variously preferred by other authors (Lauermann, 2018; Pike et al., 2020, 2019). This is to distinguish from those authors' focus on the institutional reconfiguration specif-ically within municipal and city governments. "The urban state, here, is the full range of institu-tions and relationships between them that exercise power at the urban scale and together

manage the functioning of urban systems" (Cirolia and Harber, 2021, p. 7). As is visible through the history of South Africa below, municipal governments were but a small part of the state machinery for governing the urban. They had very narrow powers of management—even narrower in the case of Black Local Authorities—in what was nevertheless an intensely managed urban system. Post-apartheid urban statecraft, including Rea Vaya itself, can be read as trying to rationalise urban governance into dedicated urban institutions, cities chief among them. Therefore understanding the processes of urban statecraft in both eras requires looking outside of municipalities to the entire urban state.

True to Bulpitt's (1983) original theory, contestations within the state are core to the concept of urban statecraft. The unitary state is at best a rough shorthand; at worst it is a category error that leads the analyst astray, chalking internal contradictions up to "politics" instead of a structural characteristic of a conglomerate of many institutions, at multiple scales, occupied by many actors. Decomposing the state as an object of analysis lets us examine its internal conditions— some necessary, many contingent. We can thus study it as not a rational corporate actor per Weber (Dusza, 1989; Migdal and Schlichte, 2016), but as a set of institutional sites of, variously, competition, contestation, and cooperation.

Furthermore, as discussed in the section above, it is not enough to deconstruct the formal state. Indeed, key to its deconstruction is to be sceptical, as Mitchell (2006) is, that the state/society distinction is truly carving the world at its joints. Following Gramsci (1971) we must look at the *integral* urban state, that is the full range of institutional formations that govern and act upon the urban, regardless of their nominal public or private nature. Indeed we must press further and say that urban state so understood is not limited to organisations formally or informally chartered, but also includes the particular arrangements of the market and of normative institutions that are at play. This is not a war of all against all as we see in Migdal's (2001) state in society, where all are in strict competition and the only stakes are power over people. But it is a packed field of play where the stakes are the construction of a social and institutional order that serves the idiosyncratic agendas of this or that group of players. When actors engage in urban statecraft, it is the form and nature of the urban state—in its most integral form—that they are competing to build to their purposes.

Making institutions through policy

In the actual work of governance, understood through urban statecraft, agents govern the city at three registers. First, in the short term, political popularity achieved by various means dominates. Second, in the longer term, policy is more significant. And thirdly above those sits a meta-political and -policy level of institutional concerns, occupied by agendas of reform, reconstruction, and consolidation. Each register is instrumentalised in service of the others: institutions are reformed to enact popular policy, popularity is leveraged for policy or institutional reform, and—central to the concerns of urban statecraft—policy is used as a means to pursue institutional agendas. States do not just enact policy: their structure is a major end to which policy is the means (Cirolia and Harber, 2021; Pike et al., 2019). The state is "a work in progress, constantly being (re)made as actors attempt to cohere and stabilize its structures and devise and implement its imaginaries, strategies and projects" (Pike et al., 2020, p. 794). Put another way, "'the state' isn't an object to be wielded like a baton. It is a field of force, contested, struggled over, formed, deformed and reformed." (Seymour, 2020)

Note that this is not to insist on whether policy or institutions are the ultimate ends of policymakers, in every or any given case. Rather they exist in a perpetual cycle. Policies are used to drive institutional change; institutions are established with a mind to specific policies, but also broad policy directions. The parallel is Marx's (1996) circuit of capital, which is never ending but where each cycle elaborates on the previous. We could represent the "circuit of statecraft" as

$$I \rightarrow P \rightarrow I' \rightarrow P'$$

where I is the initial institutional arrangements, P is policy or state projects, I' is new institutional arrangements, and P' is the policy space opened or indeed closed by those new arrangements.[7]

The way this unfolds in practice is very much an empirical question. Some projects of statecraft may be intentional, in that there is a specific vision for the state that actors try to enact: the New Public Management and building of the contract state, described below, are a clear

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[7] See for example Slobodian (2018) on neoliberalism as the engineering of novel transnational institutions to foreclose on democratic management of national economies.

example. Others may be inadvertent, accomplished through actors' attempts to change policy or deliver a project. Rea Vaya itself exhibits features of both. For its planners Rea Vaya was intended to enact, inaugurate, and embody a new urban state, with the City of Johannesburg as a rational-comprehensive authority over public transport. However in the implementation, the Rea Vaya team encountered both opponents—within and without the public sector—with different ideas of what the urban state should look like, who accordingly waged different campaigns of statecraft. These opponents, and a number of unforced errors on their own part, slowly dashed this intentional project of statecraft; the urban state that resulted was the outcome of a much more anarchic, unplanned, and uncontrolled process of multi-actor statecraft. Perhaps charitably, it came to resemble Lindblom's (1959) account of the state "muddling through", subject to bounded rationality and other constraints on rational action (see also Forester 1984). However the gap between the statecraft that was intended and that which resulted produced, I will argue, in some ways the worst of all intentional and inadvertent institutional worlds.

The second half of this chapter is a high-level account of urban statecraft at the national, provincial, and local levels in South Africa, showing that the state was constantly in play from 1948 (where the chapter starts) through to the turn of the millennium. The construction of apartheid was in no small part the assembly of a state capable of exercising control and wielding violence in a precise and highly institutionalised manner. Over the decades, the form of the state was never a closed question, with it being built and rebuilt. The transition to non-racial democracy was not just an admission of all people into the state as it existed; it entailed an immediate and ongoing reconstruction of the state at all levels. In particular, the chapter will discuss the crafting of the "contract state" (Brunette et al. 2014), a paradigmatic project of statecraft where the very point was to change how the state operated, especially at the boundary of the public and private sectors.

Indeed much of the analysis in the thesis to come will focus on this specific concern of statecraft: what is the nominal boundary of the state, how blurred and porous that boundary is, and what lies on the other side. The apartheid state had placed the boundary idiosyncratically, directing large streams of state funding to private parastatal organisations based on utility or patronage. The contract state brought the public/private border inwards until it closely circumscribed—indeed perhaps lay within–the very core functions of the state, in part to democratise access to state largesse. Chapter 3, in short, is about how infrastructure gets built as a result of

this act of statecraft. Chapter 4 is about how a major private arm of the integral urban state Chapter 5 is about a legacy parastatal waging a campaign of statecraft to prevent the democratisation of this access to the state and protect its privilege. It should be no surprise that the private/public boundary is so heavily contested through statecraft: it is, after all, where money moves from the state into private hands; private hands with views about how and where that money should flow.

Scalecraft and metropolitanisation

In contrast, Chapter 6 is less about the boundary of the public and private than about the vigorous contestation within the public sector. This is another paradigmatic form of statecraft: the myriad organisations within the (formal) state pursuing variously aligned and opposed strategies of statecraft, to remake the state and their place in it. This follows directly from the insight of the non-unitary state: the state is non-unitary exactly in the sense that it contains a multitude of institutions and actors aware of their own role in the state, and with agendas about both that role and the nature and form of the state itself.

A special case of such statecraft, albeit not uncommon and increasingly paradigmatic in urban governance, is *scalecraft* (Fraser, 2010). That is, the rescaling of the state, either with adjustment to existing institutions or with the establishment of entirely novel institutional scales. This is what Jessop (2002) calls the "new political economy of scale"; Lipietz (2003) "regional armatures"; and Brenner the "historically malleable and politically contested character of scalar organization" (2004, p. 11) and "a proliferation of strategies intended to dismantle inherited scalar configurations and to produce qualitatively new scalar hierarchies" (2004, Box 1.3).

In the 1990s and 2000s, academic literature and policy engaged closely with the decentralization of national government functions to newly-empowered or -established subnational governments (Ahmad et al., 2005; Bardhan, 2002; Bardhan and Mookherjee, 2006; Brenner, 2004; Jessop, 2002; Litvack et al., 1998). Historical local governments, frequently dating from when cities were much smaller and infrastructure more contained, were and are increasingly considered too narrow in jurisdiction to serve many urban functions, transport chief among them—an effective transport system necessarily covering the extent of the city. Thus, while functions were decentralized out of national governments, they were increasingly centralized from municipalities into new city-region or metropolitan institutions. Brenner (2004) implicates this process in

the diminution of the national state, with metropolitan "city-regions" taking the lead in supranational processes of capital accumulation.[8] In many cases metropolitanisation took and takes the form of sectoral metropolitan authorities such as transport authorities, often established specifically to deliver new Bus Rapid Transit systems (Klopp et al., 2019). However in South Africa, as will be discussed, this process of metropolitanisation was followed to its logical conclusion: the abolition of historical local authorities in major urban areas by amalgamation into so-called metropolitan municipalities (Cameron and Alvarez, 2005, 2005; Götz et al., 2011; Tomlinson, 1999).

Metropolitanisation is a paradigmatic case of Brenner's (2004) "New State Spaces", as he makes clear. This is a research programme focusing on the internal transformation of the state, especially around urban regions, that had hitherto gone largely untheorized. Cities, to Brenner, are not just subunits of the state but the key site of state restructuring towards the end of the 20th century. Whereas mid-century spatial Keynesianism had required administrative homogenisation, regional industrial development, and redistribution—loosely, directing capital in service of the state—this was eventually abandoned in the face of weakening industrial performance, urban decline, and globalisation. From the 1980s, the relationship was increasingly inversed and the state was reshaped in service of capital: regions and cities were equipped with bespoke administrative structures and special-purpose governance arrangements or even governments, to focus on infrastructure investment and other supply-side measures. In Chapter 6 the statecraft of the National Treasury can be read as an attempt to dislodge a still-prevailing spatial Keynesianism and build an infrastructure-driven, supply-side approach to urban space. Indeed, Brenner is careful to insist that metropolitan rescaling does not mean diminution of the national scale: "national state institutions [remain] as major animateurs and mediators of political-economic restructuring at all geographical scales" (p. 4). These "scalar fixes" (Brenner 1998) to the mounting challenges of capital accumulation included the formation of metropolitan governments and authorities, as was unfolding in South Africa in the 1990s and after.

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[8] The national is not the upper limit of state rescaling: Easterling coins "extrastatecraft" to describe the process of state functions being amalgamated supranationally to govern international infrastructures (2014). Brenner too theorises both "new subnational and supranational sociospatial configurations" (2004, p. 57).

Whereas Brenner's account of New State Spaces is a bloodlessly functionalist account of the results of such rescaling, Smith (2003) makes it clear that scalecraft is a vigorously political process. This includes the reproduction of "established" scales as well as the production of new scales: there is no uncontested status quo for the state, but rather an existing order that arose through statecraft and that is constantly defended through scalecraft against those actors who would rather it were otherwise and move accordingly. For many such actors, "jumping scale"—seizing the higher ground of greater scale—is a "primary avenue to power" (Smith 2003 p. 229). That said, there is power to be found in rescaling the state downwards, or simply reconfiguring existing scales in novel ways. All of these dynamics are visible in the story of South Africa and Rea Vaya, to come.

If the New State Spaces were paradigmatic of the 1980s and 1990s, what came next is called by Schindler et al. (2022) and Dicarlos and Schindler (2022) the "infrastructure state". This involved the pivoting of states away from attempting to build globally competitive cities and regions on their own terms, towards hitching their wagons to regional or global powers. The national state was once again to drive development, largely through the raising and channelling of global credit towards the production of infrastructure, often infrastructure aimed at better insertion of the state into global markets. To do this, the state had to be once again recrafted: new state spaces gave way to re-centralised control over urban regions, often just in the area of infrastructure; and public institutions were built as machines for the delivery of infrastructure, investing heavily in such capacity even as the routine operations of the state remained haphazard or neglected. While undoubtedly relevant to broader questions of statecraft and scalecraft, especially in Africa—the metropolitan transport authorities of Nairobi, Dar es Salaam, and Accra come to mind, as do standard-gauge rail projects across East Africa—it is not clear that this specifically is the right paradigm to understand Rea Vaya or urban transport infrastructure in South Africa.[9] Urban transport infrastructure has until now been funded without credit, international or otherwise. While BRT bus fleets have involved international lenders, these resemble more straightforwardly commercial arrangements without concomitant statecraft.

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[9] Energy infrastructure, harbours, and perhaps in the near future freight rail are more promising candidates for this analysis in South Africa.

Infrastructure state or no, this "spatial malleability" of the state (Boone, 2003), of which scale-craft is a form, will be clear throughout the next sections. These will recount that history of South Africa, Gauteng Province, and the City of Johannesburg to show the malleability of state and space, and the integral relationship of transport policy with those processes.

2.3. South Africa

Union of movement

From the establishment of the Union of South Africa in 1910 through that of the apartheid state in 1948 (and beyond), South African capitalism was dominated by the "gold-maize alliance" (Lundahl, 1989) of mining and agriculture (Lipton, 1988). This political alliance between capitals rested on a shared dependence on foreign markets and cheap labour. The technical demands of South African gold deposits and the expense of importing and transporting capital equipment meant that investment was directed primarily at increases in productive capacity rather than technological shifts (Gelb, 1987). In this period unskilled labour was scarce throughout southern Africa, largely because of the largely un-proletarianised subsistence farming population (Lipton, 1988). This tight labour market exerted upwards pressure on wages, while revenues were limited for mining in particular by a globally fixed gold price (Lundahl, 1989).

In partial remedy to this the Native Land Act (1913) established the first national system of racially segregated space, confining black African land ownership to "reserves" whose land would be allocated by traditional leaders. Apart from the immediate and direct effects including mass dispossession, this also represented a formalisation of indirect rule which Mamdani (1996) identifies as integral to the colonial state in Africa. In the decades to follow the Union steadily built a state infrastructure whose major purpose and economic policy was the restriction and control of black African movement (Harber, 2018; Pirie, 1992, 1987, 1986).[10] This included the Natives (Urban Areas) Act (1923) that introduced a pass system and

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[10] This extended very much to the control of movement from South Africa's neighbours: see Musoni (2018) on "the ban on 'Tropical Natives'".

embodied the sentiments of the Transvaal Local Government Commission of 1922 that 'the native should only be allowed to enter the urban areas, which are essentially the White man's creation, when he is willing to enter and minister to the needs of the White man, and should depart therefrom when he ceases so to minister' (quoted in Goodlad, 1996, p. 1630).

These passes—internal passports limiting rights of dwelling and movement—would grow to be integral to the apartheid state and its infrastructure of control.

The result was cross-subsidisation of the wages of migrant labourers, whose employers were spared the costs of reproduction: the young, the old, the infirm, and spouses were left to support themselves from the land. This was highly gendered: "the subsidy… was provided by rural African women" (Bond, 2007, p. 8). It is hard to overstate the degree to which South African capitalism depended on this state infrastructure. As the Chamber of Mines testified to the Witwatersrand Native Mine Wage Commission in 1944:

> It is clearly to the advantage of the mines that native labourers should be encouraged to return to their homes after the completion of the ordinary period of service. The maintenance of the system under which the mines are able to obtain unskilled labour at a rate less than ordinarily paid in industry depends upon this, for otherwise the subsidiary means of subsistence would disappear and the labourer would tend to become a permanent resident upon the Witwatersrand, with increased requirements. (as quoted in Wolpe, 1995)

This aggressive extraction of surplus labour led to underdevelopment and environmental degradation in the reserves. By the 1920s the reserves could no longer provide the surplus that the system depended on to cross-subsidise wages and black African poverty became increasingly widespread. In addition, as Mamdani notes: "the problem with territorial segregation was that it rendered racial domination unstable: the more the economy developed, the more it came to depend on urbanised natives" (Mamdani, 1996, p. 66). This resulted in uncontrolled urbanisation and "massive overcrowding" (Dawson, 2006, p. 127) as the state's apparatus of spatial control began to fail. Increasing numbers of black Africans and whites were living in reasonably close proximity which made stark the vast inequalities between (Mamdani, 1996). This led to a cycle of conflict, repression, and resistance. In the 1930s 171 088 black African person-hours were lost because of strikes; in the 1940s the number was 1 684 915 (Wolpe, 1995). This is the

immediate context, and proximate cause, for the election (on a minority franchise) of the Reunited National Party[11] and its platform of apartheid, or "separateness".

Apartheid, influx control, and the building of an apparatus of control

The National Party had been divided by an internal debate in the run-up to the 1948 election between hard-line nationalists demanding total segregation and pragmatists advocating a qualified segregation based on the existing migrant labour system. The latter proposal was designed to enlarge the supply and reduce the cost of black African labour. Each would have entailed a very different state apparatus. The pragmatists prevailed, and to manage the contradictions of the colonial mode of regulation, the apartheid state had to build a larger, more comprehensive, and more repressive institutional infrastructure for the control and facilitation of African movement.

The colonial order had resulted in high levels of black African urbanisation as subsistence economies and rural wages grew increasingly meagre. Accordingly the core of the new apartheid order would be focused on urbanisation—management and prevention thereof—and new powers for state institutions to control it. These institutions put planning, especially town and urban planning, at the centre of the state and a new, strengthened spatial planning bureaucracy was built at national, provincial, and local levels (Mabin and Smit, 1997). Mabin (1992) describes tensions between local planners, trying to develop urban land use schemes, and the Land Tenure Advisory Board which administered the Group Areas Act. The local plans tended to be literally shelved, as the higher law of racial segregation not only overruled but displaced the other work of planners. Each of the major laws and policies of formal apartheid would be a clear example of statecraft, and frequently scalecraft, as the South African state built its institutional capacity for this control.

 The Group Areas Act (1950), lying "at the very core of urban apartheid" (Mabin, 1992, p. 405), segregated urban areas by race and empowered town planners to undertake mass displacement of people to their racially designated townships. The Bantu Authorities Act (1951) institutionalised indirect rule by creating formal "chiefdoms" to exercise more expansive indirect rule over

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[11] Later just the National Party, and hereafter referred to as such.

reserves.[12] This was a paradigmatic example of both statecraft and scalecraft in that it devolved significant powers and mechanisms of state control, and established new ones, to sit in newly empowered subnational institutions. The Abolition of Passes and Coordination of Documents Act (1952) in fact extended the 1923 pass laws to every black African. The dompas, as it came to be known, determined where its bearer was allowed to live, work and visit, and was a key mechanism for the exercise of state control—both through labour law that forced employers to adhere to the conditions named on the pass and through the police, who could and did routinely stop black Africans for document inspections and harsh punishment for violations. Labour bureaux were established in 1951 as institutions dedicated to using these growing powers to control where black Africans could seek work, and under the Natives (Urban Areas) Amendment Act (1955) black Africans could not live in any town except where they had been born or had worked for 15 years (or 10 years for a single employer).

The laws controlling the mobility of Africans and the overarching policy were collectively known as "influx control". Influx control, as well as other more obviously economic laws such as the (older) so-called "colour bar", which reserved certain categories of labour for white workers, ensured a supply of cheap black African labour for white capital and formed the core of the apartheid regime.

Over this period and through these laws, an institutional order and bureaucracy was built that was able to project an unprecedented degree of state power on—primarily—black Africans.[13] However an institutional order predicated on the control of people by race required also the control of race—statecraft required racecraft—to maintain apartheid's "macro-social coherence" (Villeval, 2002). The Population Registration Act (1948) formalised racial categories and assigned one to every person. The Prohibition of Mixed Marriages Act (1949) and Immorality Amendment Act (1950), banning marriage and sex respectively between whites and people of other races—without minimising the ideological rationale of these laws—also served to preserve the sanctity of the racial categories, if not actually then sufficiently for the purposes of

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[12] Bantu was the official term in early apartheid for black Africans, named for the language group to which a large portion of black Africans belonged.

[13] Unquestionably the apartheid state's repression extended to all races, in various forms and to various degrees; I focus on the starkest intentions and effects only for the sake of brevity.

bureaucratic administration. These laws extended the powers of the state, in the form of the police, deep into the hitherto private lives of people regardless of their violation of them; even minimal suspicion of interracial "immorality" would result in home raids.

The spatial form that resulted from this complex of laws was characterised by economic centralisation into relatively few centres of mining and manufacturing, and residential decentralisation, with dormitory communities of labour scattered as far as influx control could send them. This was the case both at a national level—with urban centres being sites of major economic activity and employment, and formal labour reserves in rural areas—and at an urban level: cities had traditional economically dominant downtowns and labour reserves of their own in the form of townships allocated under the Group Areas Act. By the 1970s more than a million people had been forcibly removed from South Africa's cities (Bester, 2001).

Although the law was used to prevent the unwanted movement of black Africans, there had to be a way to move people as needed by the state and by employers. Black Africans' long commutes and low incomes meant that "regular, efficient and inexpensive public transport was imperative to ensure that the massive displacement of the workforce did not interrupt the smooth working of the economy" (Pirie, 1992, p. 173). Long-distance commuting was therefore both necessary and common, and the resultant investment was poured into extensive but extremely selective public transport infrastructure. Links were made between residential and economic nodes with trains and buses, but stations were poorly integrated into townships, and little attention was given to even basic amenities (Pirie, 1992). Fares were highly subsidised. Apart from public transport, the cities required "the full panoply of the modern state for its administration and maintenance. The classic tools of modernist social engineering, including urban planning, public administration, and criminal justice, were all deployed" (Dawson, 2006, p. 126).

This admittedly hasty sketch is nevertheless enough enough to make the point at a large scale: we can see that the construction of apartheid was in its details the construction of a high modernist state with institutions and bureaucracies equipped for economic, political, and biopolitical management. These institutions and bureaucracies imposed separation and distance on society, and then mediated that distance by providing transport and controlling it tightly.

Crisis and oilspots

Without dwelling on the economic crisis that emerged in this system from the 1960s (on which see O'Meara, 1996; Marais, 2001, 2010), a combination of intensifying impoverishment and shifts in labour demand resulted in the breakdown of influx control. By the 1970s "the idea of blockading Africans in literal peripheries was in crisis. The reality of an exponentially growing, permanent, urbanized African population had become irreversible" (Marais, 2010, p. 32). The statecraft that resulted was ad hoc and largely ineffectual or even counterproductive. Bantu Affairs Administration Boards were introduced in 1971, and elected Black Local Authorities in 1982, both attempts to administer and control increasingly ungovernable townships. This was the establishment of the two-tier municipal system that the reforms of the 1990s would be aimed at abolishing. As Tomlinson described the municipal structure before 1994, "this was essentially a period of disintegration as the different races operated under different legal and planning systems, had vastly different resource bases and different service levels." (Tomlinson, 1999, tbl. 1).

A succession of short-lived policy fixes was introduced. Influx control was nominally replaced with a policy of "managed urbanisation", distinguishing between qualified and unqualified black Africans, the effect of which was "to tighten, not relax, the mechanisms of influx control" (Gelb and Saul, 1981, p. 49). The subsequent policy of "inward industrialisation" intended to take advantage of demand from urbanising black African workers, especially demand for housing (Lewis, 1991). Fiscal crisis and an IMF bailout in 1982 resulted in the withdrawal of the large part of subsidies for transport and state housing. This drove huge demand for housing close to economic activity, that is to say in urban cores. By the mid-1980s urbanisation controls had been abandoned entirely and the apartheid state was largely reduced to fighting a rear-guard action on the control and movement of people.

There are three particularly notable elements to this rear-guard action. The first was the creation of the modern industries of minibus taxis and conventional buses. The withdrawal of subsidies from public transport resulted in deteriorating service and increased costs, financial and otherwise, for black African commuters (McCarthy, 1992; Turok, 2001). Policymakers looked increasingly to the informal sector in general to both deliver services and increase employment (Lewis, 1991). A series of reports, studies, and commissions throughout the 1980s declared variously that privately black African-owned minibus taxis represented "popular capitalism", that

they had become an integral part of the passenger transport system, and that they should be deregulated, formalised with licensing, and permitted to compete without restriction with white-owned conventional bus companies (Khosa, 1998). These bus companies in turn were proposed to be protected from the minibus taxis through three-year interim contracts, giving way to competitively tendered contracts. These policy choices had enormous direct implications for Rea Vaya, dealt with in detail in Chapters 4 and 5. For now, however, we can note that it was in this era that the regulatory and contracting environment was established for these industries, and that this was still in place in the 2000s.

The second notable element is the policy of "orderly urbanisation" that replaced influx control and managed urbanisation. The essence of orderly urbanisation was every person in their place, which entailed a raft of new laws regarding squatting and urban planning. The result was to intentionally direct the poorest members of the black African working class into shanty towns (originally "squatter camps", now "informal settlements") on the urban periphery. These housed 7 million people across South Africa by the early 1990s, while members of the working class and emerging middle class who could afford it were directed into township housing priced respectively for them (Beinart, 2001). This stabilised the rapidly urbanizing black African population, reducing the instability that mining capital increasingly recognised and regretted as a product of the migrant labour system (Freund, 1991). Orderly urbanisation depended on the rapid rise of housing finance, with strong state backing, as a disciplinary measure for black Africans in the face of mounting resistance to the state (Bond, 2000). Thus was the origin of the typical settlement pattern of contemporary South African cities, Johannesburg among them. This is today frequently called the "apartheid spatial form", which while not incorrect elides the fact that some of its most notable features emerged in apartheid's last years in an ultimately vain attempt to stabilise the system.

The third notable element is the establishment of Joint Management Centres (JMCs). These new institutions of the apartheid state coordinated "military, police, and civil functions at a local level, sometimes displacing black Community Councils; they tried to upgrade facilities and living conditions in black townships, offering the promise of a taste of 'the good life'." (Beinart, 2001, p. 268). These institutions, replacing or bypassing routine governance in favour of militarised technocracy, "resulted in almost every public service office having a representative involved in the security system, with profound effects on the workings of many of those offices." (Mabin and Smit, 1997, p. 212). They were established in 34 "oil-spots" around the country, including

Alexandra and Soweto in what is now the City of Johannesburg (Boraine, 1989). [14] Joint Management Centres were established in a further 200 areas, designated for all races (black African areas received repression and upgrading; white areas just repression). Joint Management Centres were typically chaired by a member of the security services and composed of four committees, detailed in Table 2.

Table 2: The structure of a Joint Management Centre, adapted from "Briefing paper two: the National Security Management System" (1986).

Intelligence Committee	Security police, military police, National Intelligence Service.
Security Committee	Riot Police, soldiers, municipal police, kitskonstabel[15] officers.
Welfare Committee	Officials from various government Departments: Education and Training, Transport, Health, Constitutional Development.
Communications Committee	Propaganda officials from Bureau for Information, Town Council newspapers.

Joint Management Centres were merely the sharp end of the National Security Management System (NSMS). This was a total reorganisation of the South African state, undertaken over 15 years, to pursue a "total strategy" to defend apartheid. It established an enormously powerful institution, the State Security Council, to which a series of nested JMCs reported. See Figure 3 for the overall structure of the NSMS. Although the NSMS was a national institutional structure,

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[14] Oil-spots were named as such by French general Joseph-Simon Gallieni to describe his counterinsurgency strategy in Madagascar, later used to describe counterinsurgency in Vietnam and Iraq: "the occupying army would gradually and evenly expand its control outward from a central stronghold, as oil spreads on paper" (Khalili, 2010, p. 15).

[15] "Kitskonstabels" ("instant constables") were auxiliary police officers with little training, infamous for brutal zealousness and lack of regard for the law.

"it [has] to be located within the context of the crisis in the urban areas over the past 15 years."
(Boraine, 1989, p. 47)

This is not the thesis for an extended discussion on the national security reforms of the 1980s—
or indeed their failure and the end of white rule. But it is important to note that, to the very end
of apartheid, the statecraft of the South African state at the highest levels was aimed at the ra-
cialised control of cities and urbanisation. The apartheid state was fashioned into a machine for
extraordinary repression, right up until it fell.

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STATE PRESIDENT

STATE SECURITY COUNCIL
Cabinet ministers, army chiefs, police chiefs,
intelligence (spy) chiefs.

JOINT MANAGEMENT CENTRE
Your region, eg. W Cape, Witwatersrand, Pretoria, Natal.

SUB-JOINT MANAGEMENT CENTRE
Your district, eg. Cape Town, Port Elizabeth,
Johannesburg.

MINI-JOINT MANAGEMENT CENTRE
Your township or suburb, eg. Athlone, Lamontville,
Dobsonville.
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**Figure 3 The structure of the National Security Management System, from "Briefing paper
two: the National Security Management System" (1986).**

2.4. Gauteng

Unlike South Africa, Gauteng did not exist in any form, administrative or linguistic, until the very
end of the 20th century. It would come into existence as the result of a cyclical process of infra-
structure development and scalecraft: a fine illustration of the role that capital projects play in
statebuilding.

By the turn of the 20th Century, the Witwatersrand, the gold-rich belt running from Randfontein
in the west through Johannesburg to Springs in the east was heavily settled yet unserved by any
sort of local government. In 1902 the Rand Water Board was established to address the region's
dearth of water; it consisted of "nascent municipalities from the Vaal River to Pretoria as well as

gold mine companies, and was responsible for planning and managing water supply across the region" (Mabin, 2013, p. 7). Mabin ascribes this emergence of regional governance to the proximity between administrative power in Pretoria, economic power in the nascent Johannesburg, and the water of the Vaal. Harber and Joseph argue rather it was the contradiction between proximity and distance that "necessitated a *regional*, rather than *municipal*, administrative solution" (Harber and Joseph, 2018, p. 10). This calls to mind the proximity-distance (or attraction-repulsion) contradiction that Storper (2014) describes as inherent to the governance of the city; a contradiction that is also mediated through, but not at all obviated by, infrastructure.

The 1920 amalgamation of four colonies into the Union of South Africa itself represented an act of scalecraft, as indeed results from all colonial conquests. Even before that, however, we see the establishment of a novel form of subnational government, purpose-constructed for an infrastructure project, in the form of the Rand Water Board. The result of this was not only to establish this specific institution, but to establish the regional scale as one for later forms of governance, as Mabin (2013) argues. For example the Witwatersrand and Pretoria Joint Town Planning Committee, established in the 1930s, entertained debate over planning the "the Rand Water Board area" along the lines of the emerging "regional movement" in the Greater Ruhr, London, Manchester, Glasgow and Greater Birmingham (Mabin, 2013, p. 8). In practice its role was limited to coordinating individual town plans, partly out of conflict over what a regional plan would entail. By the 1950s however the "Pretoria-Witwatersrand-Vereeniging" (PWV) area was targeted in bona fide regional plans, with a dedicated planning authority in the form of the Natural Resources Development Council. See Figure 4 for a map of the PWV planning area and the same area today; note how this quasi-administrative boundary continues to shape urban development.

The PWV as governance scale informed the next round of major regional infrastructure development, in the form of a highway system in the 1960s and 1970s. From the early 1970s this was explicitly so, with planning undertaken by a powerful group of private consultants calling itself the PWV Consortium. The concept was also used by organisations ranging from the market-oriented Urban Foundation—which largely designed late- and post-apartheid housing policy—to the more radical Planact, many of whose members would go on to join and wield influence in post-apartheid provincial and municipal governments (Bond, 2000; PARI, 2013). The Central Witwatersrand Metropolitan Chamber, a predecessor to the metropolitan City of Johannesburg,

reinscribed the concept in the form of the PWV Forum, established to coordinate regional planning.
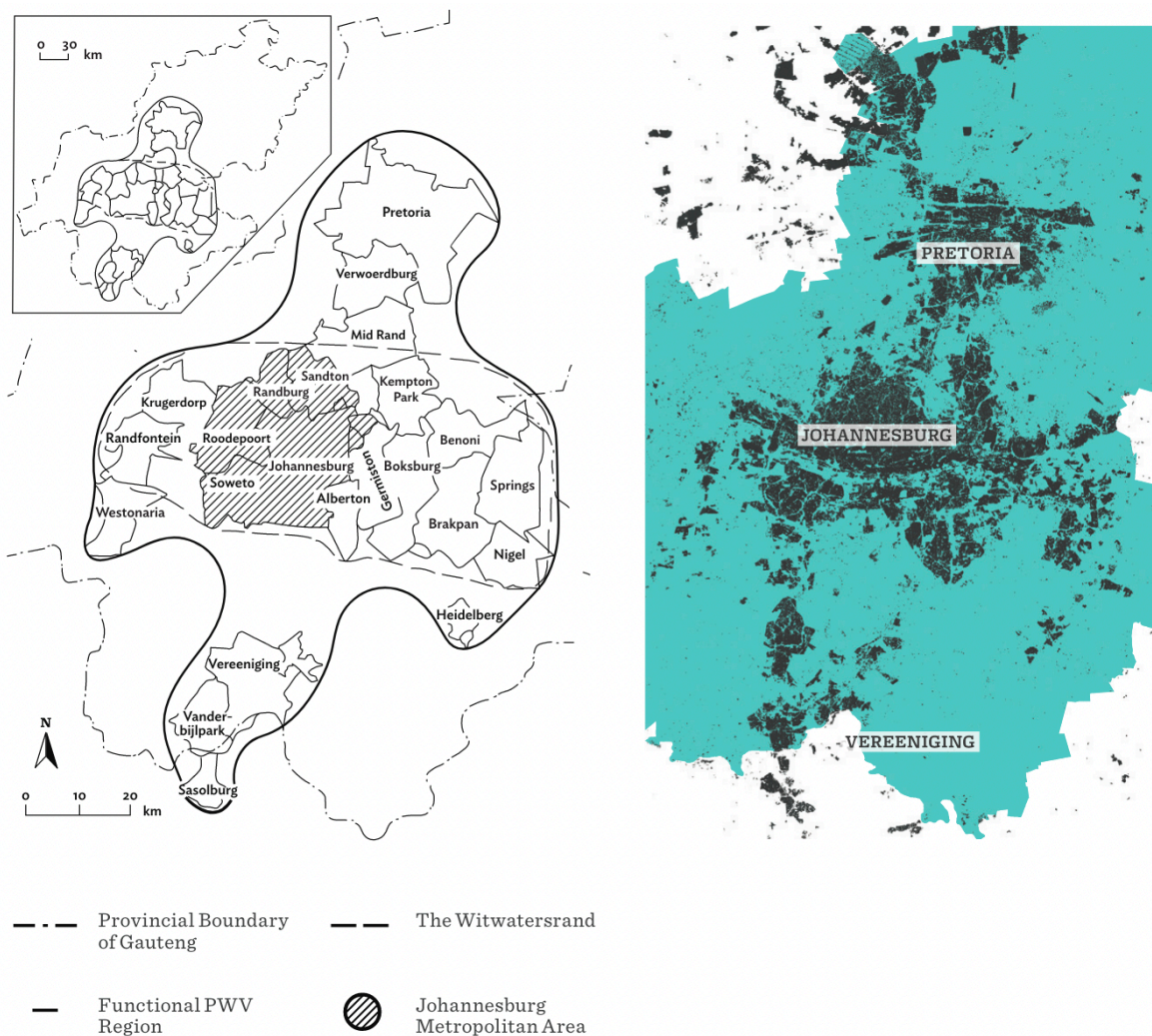
Figure 4: Left: The Pretoria-Witwatersrand-Vereeniging planning area, overlaid with 1997 boundaries (Beavon, 1997). Right: the same area today, with built-up locations marked (Ballard and Bobbins, 2015). As reproduced in Harber and Joseph (2018).

In 1981, the apartheid government had divided the country into nine "development regions" defined by "the contours of emergent labour supply and demand areas which have become interconnected" largely by the processes of apartheid spatial planning as described earlier in the chapter (Cobbett et al., 1985, p. 101). Region H was essentially the PWV plus some areas that had since grown into integration with it. When the four enormous provinces of apartheid South Africa, corresponding to the four colonies that formed the Union, were broken into the provinces that exist today, they were based almost entirely on these development regions. Region H

née PWV was institutionalised as a province in the interim constitution of 1994; named Gauteng in 1995; and entrenched in the present constitution of 1996.

The Gauteng Provincial Government that resulted from this century-long process was established in a time of small and underpowered municipalities; within a few years, however, it contained three newly expanded and -empowered metropolitan municipalities: the Cities of Johannesburg, Tshwane, and Ekurhuleni. It also had dramatically reduced powers compared to the former provinces. Before 1996, legislative control over local governments was vested in the provinces, and local governments enjoyed only those powers and functions assigned to them by national and provincial governments. After 1985, provincial governments were governed by a nationally-appointed administrator and a committee of national members of parliament, with no electoral input (Drake, 1993). In contrast, the post-apartheid constitutional order established national, provincial, and local governments as co-equal "spheres" of government, each with inalienable powers and functions (albeit some jointly exercised).

The history of Gauteng (and the area preceding it) is therefore one of a looping process of institutional reform and infrastructure investment. The current jurisdiction of the provincial government was established by a system of highways, and before that a water supply network. It is, in all, hard to imagine a clearer example of the circuit of infrastructural statecraft than the history of Gauteng.

2.5. Johannesburg

For the entire 20th century, and therefore for the much greater part of its history, Johannesburg was a city but not a City. That is to say, while by the mid-century Johannesburg was characterised by the density, urban form (complete with skyscrapers), transport system (including conventional buses and trams) and other stereotypical characteristics of the urban, there was not the legal and administrative infrastructure to match. The municipality called Johannesburg had been established in 1904, but the conurbation by the same name grew to spread across between what were at various times between 11 and 15 municipalities. In this way, Johannesburg and the South African local government system were reasonably typical for European and post-colonial municipalities of the 20th century: small, largely pre-automobile areas governed by dedicated administrations directly responsible for a range of public services.

They were not typical, of course, in the degree and intensity of racial segregation (Murray, 2011). Whereas the relatively unregulated pragmatism of the mining camp that became Johannesburg had produced racially proximate, if not integrated, settlement patterns, apartheid dramatically reduced that proximity. By the 1980s, forced removals and movement restrictions effecting the Group Areas Act had resulted in almost total segregation. Figure 5 is a map showing the map of Johannesburg's group areas; Table 3 shows how racial exclusion from white areas peaked in the 1980s for Johannesburg in particular, diminishing thereafter.
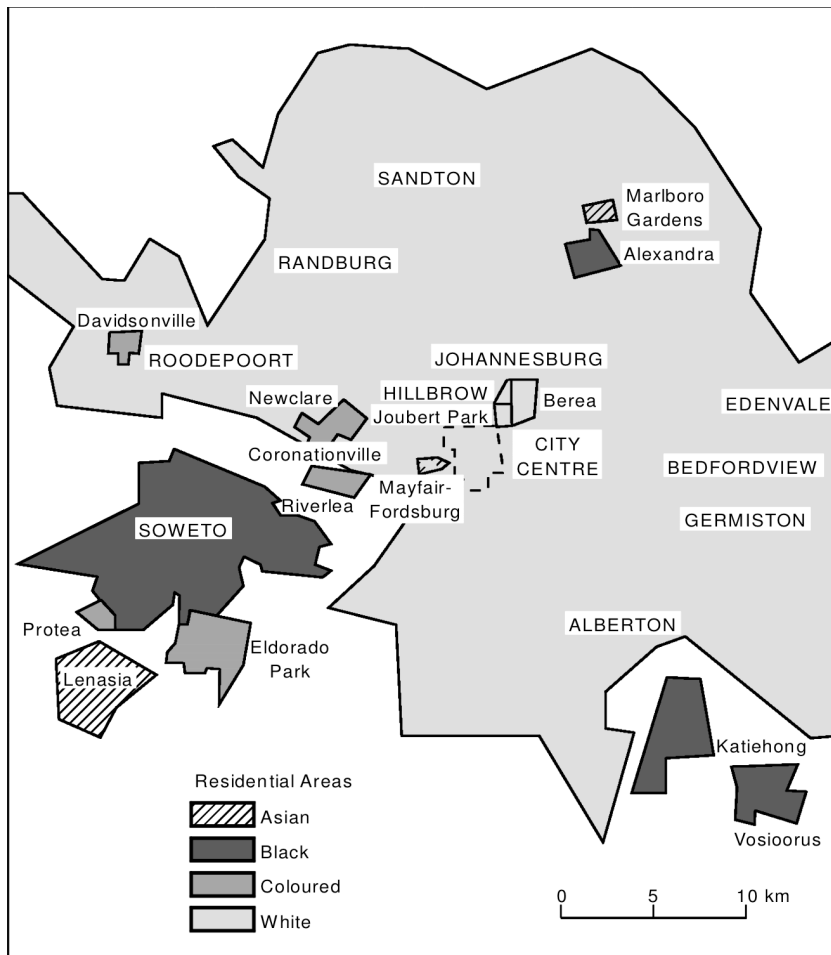
Figure 5: Johannesburg's neighbourhoods by "group area" Source: Morris (1999, fig. 1).

Table 3: White indices of segregation in the five main metropolitan areas 1951-96. Source: Christopher (2001, tbl. 3).

	White index of segregation[16]					
Metropolitan Area	1951	1960	1970	1985	1991	1996
Johannesburg	75	82	89	96	89	86
Durban	71	78	88	96	96	93
Cape Town	71	78	89	94	96	93
Pretoria	72	80	86	92	88	86
Port Elizabeth	79	89	94	97	98	96

As with Gauteng, even before the establishment of local government in Johannesburg its form was being shaped by transport infrastructure. A burgeoning Central Business District was boosted by the arrival of the Rand Tram in 1890, a coal-and-passenger service from Boksburg in the west (Beavon, 2001). Similarly, from 1891 Johannesburg's first dedicated public transport system, horse-drawn trams, further accelerated the growth of commercial activity and began the process of outward spread from the city's pedestrian core (Hart, 1984). The limitations of driving horse-drawn vehicles on a gradient, among other factors, led this spread to run east and west rather than to the altitudinous north. The trams were a mix of municipal services and private operators established to encourage sales in new residential areas: a clear case of "Development-Oriented Transit" (Carlton, 2009). From 1903 they were joined by privately-operated motorbuses. Black Africans were excluded from these road-based services, both by law and by

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[16] The index measures the difference in population concentration of a given group, here whites, in individual census tracts compared to the city as a whole. An index of 0 indicates that racial groups are evenly distributed across census tracts: a 70% black African/30% white city (say) has that same distribution in every tract. An index of 100 indicates that every tract only contains populations of white or black African, but never both: total segregation. In practice a score under 30 indicates only random distribution, and no meaningful segregation; scores over 70 "represent structural segregation, where legal constraints and manipulation of the property market were significant factors enforcing segregation." (Christopher, 2001, p. 451; citing Kantrowitz, 1979)

forced relocation to unserved areas, leading many to settle along the rail from which they were not excluded (Hart, 1984). The sequential rollout of mainline rail, electric trams, and municipal motorbuses both encouraged further urban expansion, and produced new political and legal contestations over how black Africans were to travel through the city (Beavon, 2001; Hart, 1984). As electric trams were introduced, capable of climbing steeper gradients than horses, the first of what are now called the northern suburbs were proclaimed. Figure 6 shows the electric tram routes as they began encroaching northwards.
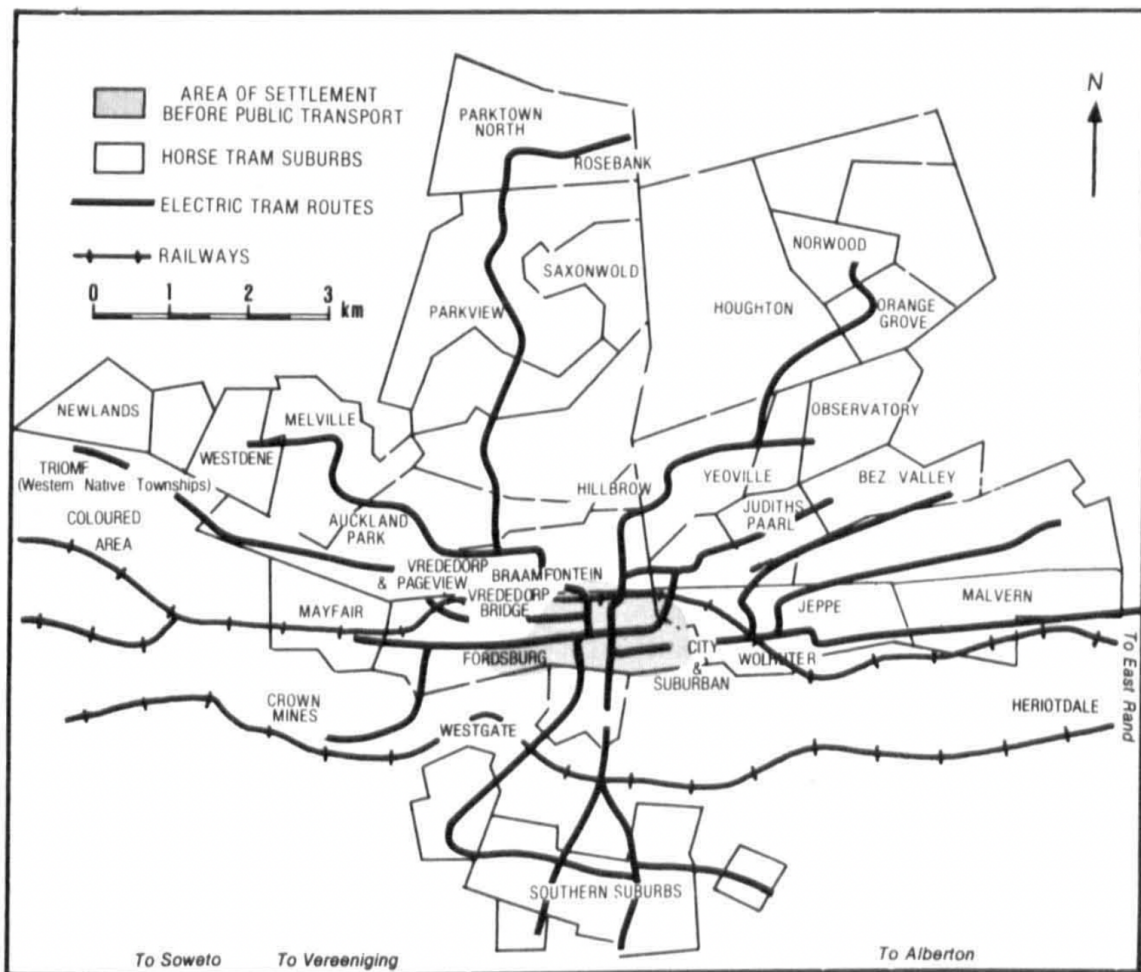
Figure 6: Electric tramways in Johannesburg 1906-1939: (Hart, 1984, fig. 3).

By the 1930s private motor cars were not only in widespread use but already considered an alarming social hazard. A 1930 newspaper article titled "Motor menace to city" claimed that "Johannesburg's streets are more dangerous than the Metropolitan area of London" (quoted in Morgan, 2018). Experiments with engineering solutions, such as traffic lights (from 1927), pedestrian islands, and lane markings, were well underway throughout the 1930s. These safety

innovations extended to a painted bicycle lane on a main thoroughfare from 1935 (Morgan, 2018).

By the 1950s, motor cars were the dominant mode of transport for white Johannesburgers, undermining the economics of the electric trams which were left to serve much poorer racial populations (Beavon, 2001; Hart, 1984). The last tram ran in 1961, ceding the city to motorcars and -buses, with mainline trains serving only main trunks. An urban highway system designed by local and American engineers in the 1950s was eventually completed by 1972. Even these highway had a political character: they were built largely by expropriating the land of wealthy, predominantly English-speaking whites, and entirely bypassed black African areas. The M1 North highway destroyed the majority of historical mansions in Parktown, traditionally the homes of English mining bosses, and was and remains the most prominent of these motorways, directing development far into the north of the city:

> These suburbs, previously considered quite remote from the centre of Johannesburg have been brought to within the thirty minute isochrone centred on the City Hall by the M1 motorway. Inevitably therefore, the lower land price, lower taxes and the semi-rural environment have encouraged individuals and families to migrate outwards. (Hart, 1984, p. 163)

From the 1980s this increasing automobile dependence, national retrenchment of public transport, and the abandonment of urbanization controls produced in Johannesburg a rapid growth in the black African population and dramatic white flight from the CBD. The result was "decentralisation, deconcentration, northern drift and differentiation" (Turok, 2001), dispersing economic activity into hitherto white suburbia. Johannesburg is therefore characterised by combination of a negative population gradient and a weakly positive employment gradient—that is to say a population concentrated on the urban periphery and job opportunities concentrated in the urban core (Harrison and Todes, 2015). Together these produce significant "spatial mismatch" between jobs and residents (Budlender, 2016).

Johannesburg 2.0

As discussed so far, the institutional and spatial form of cities were central to the injustices of apartheid. These issues were therefore central to activism and policymaking in the years leading up to, and following, the end of apartheid in the 1990s. In this period we can see processes of outright urban statecraft, as the nature and form of cities became intensely politicised as the objects of reform.

In Johannesburg, "racial residential segregation was not just about physical partition, but also about administrative division" (Beall, Crankshaw and Parnell, 2002, p. 68). As mentioned earlier in the chapter, Black Local Authorities (BLAs) had been established in 1982 as a facsimile of democratic local government, equivalent to that in the white group areas. The BLAs were "in an impossible situation - as illegitimate political structures, they were supposed to collect rents and services payments and use this inadequate revenue basis to run the townships" (Tomlinson, 1999, p. 7). The inadequacy of local revenue was partly because black African ratepayers had been kept poorer than white but also because, by design, these areas included no industrial and only minimal commercial activity. Almost immediately the BLAs became the objects of wide-spread boycotts and protests. "The civic movement was demanding more than the constricted urban citizenship the government was offering." (Tomlinson et al., 2003, p. 9).

The national centre of the civic movement, beginning with the 1976 uprisings over schooling, was Soweto, the south-west townships of Johannesburg. The Soweto Rent Boycott began in 1986, eventually to include 80% of the area's hitherto rent-paying households (Tomlinson, 1999). The Soweto Civic Association who led the boycott maintained five core demands, of which one was explicitly a demand for institutional reform: "one city, one tax base" for Soweto and Johannesburg. As the 1980s progressed and saw dramatic conflict, "some of the most intense battles of the internal struggle against Apartheid […] coalesced around protests against urban containment." (Bradlow, 2021, p. 4).

After its initial resistance in negotiations, in 1990 the state capitulated and signed the Soweto Accord. This created the Central Witwatersrand Metropolitan Chamber (CWMC) to negotiate the agreement's implementation by consensus. This established a national model, to be formalised in the 1993 Local Government Transition Act (LGTA): a "pre-interim phase" of local negotiating fora; an interim phase to begin with 1995 municipal elections; and a final phase to begin once a new local system had been designed (Tomlinson et al., 2003). Under the Act the CWMC

became the Greater Johannesburg Local Government Forum (GJLGF), tasked with its nationwide equivalents to "negotiate locally appropriate solutions consistent with principles of nonracialism, democracy, accountability and one tax base" (Tomlinson, 1999, p. 9).

These fora were thus dedicated explicitly to questions of statecraft: what would be the structure of the post-apartheid local government system; what powers would local governments wield; and what functions would they serve? At a national level, the ANC and civic movement had pushed for strong metropolitan government for developmental and redistributive reasons. The National Party had resisted, on the basis that such metros were likely to be controlled by the ANC; it favoured weak metropolitan government and strong local councils, a number of which it was likely to control including many of the wealthier ones (Cameron, 1996).

 The CWMC had been working towards a unitary metropolitan government, the so-called "unicity", but the LGTA directed negotiations towards a two-tier system (Götz et al., 2011). The GJLGF quickly agreed that the metropolitan tier would govern all of Greater Johannesburg—as opposed to dividing the area between several such governments—but disagreement arose on the number and size of local substructures. The radical, multiracial ANC wanted four large substructures, so that each would be able to raise sufficient taxes and redistribute them internally. The liberal, historically white Democratic Party called for up to 20 small substructures, for the sake of local democracy and participation. The proposal that won out through arbitration was from the largely ANC-aligned but increasingly estranged civic movement, and it was something of a compromise: seven substructures, with fiscal redistribution managed by a strong central metropolitan structure. For the rest of the pre-interim period, all municipal powers and functions were to be vested in the Greater Johannesburg Metropolitan Council, along with budgeting and setting minimum service levels. After its formal proclamation in December 1994 the GJMC established management structures and began managing the transition from the previous local government system into a new Transitional Metropolitan Council (Cameron, 2000; Tomlinson, 1999).

The question of internal structures, however, was not dispatched with. Provincial demarcation boards had been established under the LGTA to deal with the rationalisation and amalgamation of boundaries demanded by the new local government system. The Gauteng Demarcation Board's recommendations of April 1995 were rejected by the provincial government: the provincial ANC was insisting on its preferred three or four large municipal substructures in

Johannesburg, rather than the agreed seven (Tomlinson, 1999). The provincial cabinet ruled for four strong Metropolitan Local Councils, and a weak Greater Johannesburg Transitional Metropolitan Council. Figure 7 below shows the demarcation of Johannesburg before, during, and after the reconfigurations of the 1990s.
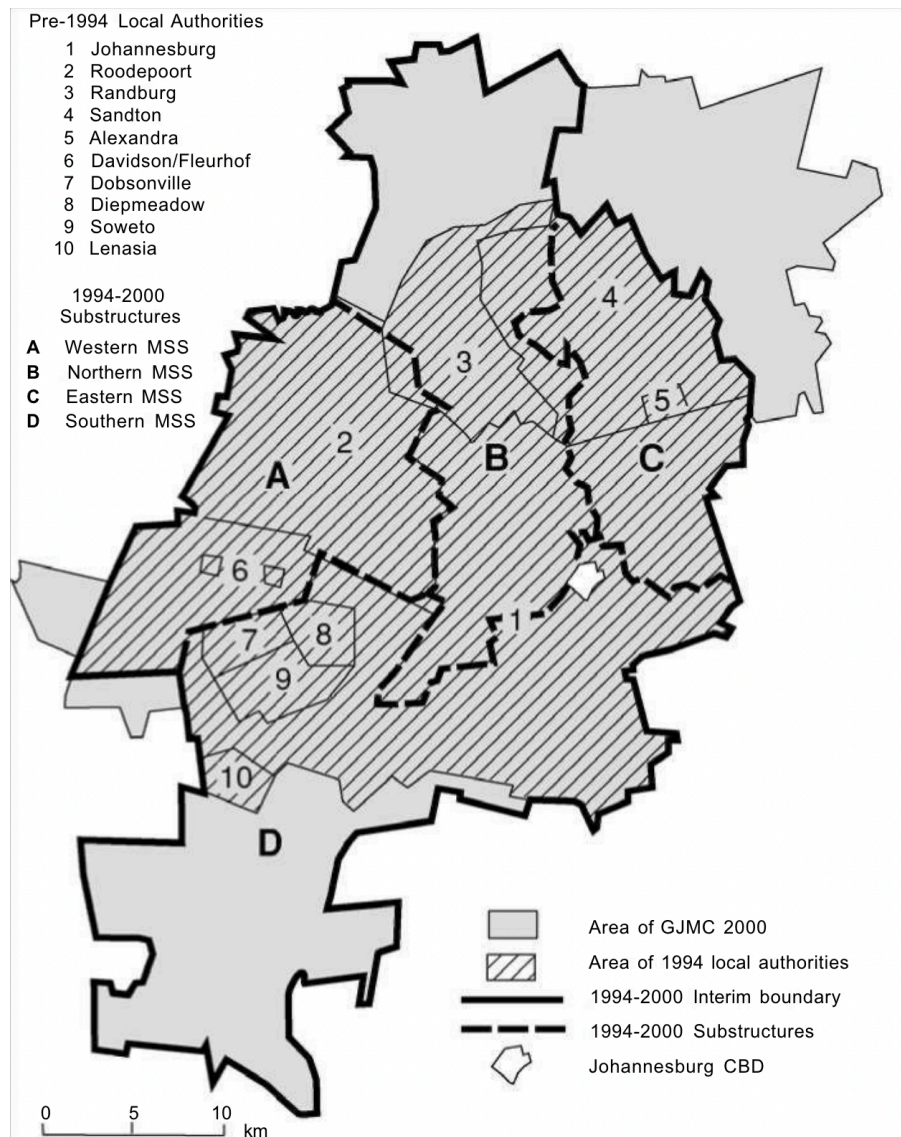
Figure 7: Shifting boundaries of municipal administration in expanding Johannesburg (Beall et al., 2002, fig. 5.1)

This system fell immediately into crisis. The local councils remained minimally reformed from their predecessor institutions and conflict arose between new ANC councillors and incumbents. The new structures had inherited the entire staff of the previous local government system, leaving it heavily overstaffed (Cartwright and Marrengane, 2016). Conflict emerged within the ANC and with the civic movement: civic leaders had been co-opted into the new councils, and

structures and traditions of participation ran up against technocratic approaches to develop-ment (Heller, 2003). The rent boycott had consolidated into systemic non-payment regardless of politics, leaving the poorer local councils with a dearth of revenue. The wealthy area of Sandton had undertaken a rates boycott in direct response to the "one tax base" provision of the new system: Sandton had hitherto gotten by with a lower assessment rate than poorer municipali-ties, who had to tax at a higher rate to raise comparable revenue. Sandton's ratepayers simply ignored the increases imposed by a uniform metropolitan rate. To top it all, the two-tier system had assigned spending decisions to local councils, but liability for the overall budget to the met-ropolitan council, resulting in a "spending spree" (Götz et al., 2011). Bradlow (2021) argues that the dysfunctional design and speedy collapse of Johannesburg in this period is largely due to the manoeuvres of statecraft by property owners in historically wealthy white areas such as Sandton, opposed to cross-subsidy and common governance. In any case, by 1997 "the newly democratized city of Johannesburg was a spatial, fiscal and governance mess", culminating in fiscal near-collapse (Cartwright and Marrengane, 2016, p. 9).

After interventions by the provincial government and National Treasury to stabilise the city and its finances, the local government system was overhauled once again. At each stage, Johannes-burg had been the site of experimental statecraft, in both politics and implementation, and its lessons were used to determine the design of the national system (Beall et al., 2000; Götz et al., 2011). Amidst intense conflict it had pioneered the metropolitan negotiating model in the Cen-tral Witwatersrand Metropolitan Chamber which was quickly propagated through the Local Government Transition Act. Its two-tier system became the national model, and its collapse prompted the 1998 White Paper on Local Government and the Local Government: Municipal Structures Act of the same year. These overruled the objections of opposition parties to estab-lish unitary metropolitan government in the largest six (later eight) cities in South Africa. As Beall, Crankshaw, and Parnell have it,

> the fiscal problems of Johannesburg provided an opportunity for national government to simultaneously address its concerns with the institutional and operational structures of all of the large municipalities, under the guise of remedying the problems of Johannesburg. (2002, p. 95)

In 2001 the first council of the City of Johannesburg was elected. The city had become a City.

The 1990s therefore neatly encapsulated what was an intense period of negotiation about the nature, purpose, size, and structure of the urban state. These were explicit processes of urban statecraft and frequently of scalecraft—what else, after all, is the question of large, small, or no democratic substructures, the difference between which would determine the autonomy, accountability, fiscus, and partisan control of the new urban state. There is no doubt that the parties involved had some sense of the policies they would enact, given the state they wanted and were in control of. At least as big a factor were the policies they wanted to foreclose on with the form of the state: for example the incumbent white parties' concern about the redistributive potential of a strong metropolitan government. The terrain on which this contestation happened was the form and scale of the state.

New Public Management comes to town

Metropolitanisation, of which Johannesburg is an unusually complete example, is closely associated with 21st-century urban public transport investments, especially but not only in Africa (Klopp et al., 2019; Kumar and Agarwal, 2013; Kumar and Barrett, 2008). This is for the simple reason that contemporary cities, especially in automobile-dependent contexts, almost always sprawl far beyond historical local government boundaries, especially those of colonial origin. Thus transport solutions that serve the entire metropolitan area, as the greater footprint of a city is called, require governance arrangements of a similarly metropolitan nature. It is for this reason among others that Götz et al. (2011) describe metropolitanisation in the form of the unicity as integral to the very conception, not to mention implementation, of citywide infrastructure such as Rea Vaya; and why the previous section studied the processes of Johannesburg's municipal amalgamation so closely.

There was however another way in which the crafting of the City of Johannesburg had, as will be clear in later chapters, an enormous if not decisive effect on the implementation of Rea Vaya. That is what is frequently referred to as Johannesburg's "corporatized" structure, deriving largely from the principles of the New Public Management that were ascendant in the English-speaking world in the 1980s and 1990s.

In very brief summary, the New Public Management was a bundle of "at times contradictory" precepts for state reform, arising from mounting critiques of the Weberian state after the 1970s (Chipkin and Lipietz, 2012). It was nominally intended to improve the flexibility, efficiency, and

accountability of the state by importing private-sector management practices and disrupting legacy bureaucracies. Hood (1991) identified the core "doctrines" of the New Public Management—on which see Table 4—but noted that "not all of the seven elements were equally present in all cases; nor are they necessarily fully consistent, partly because they do not have a single intellectual provenance." (Hood, 1991, p. 4).

Cameron (2009) ascribes the adoption of New Public Management principles in public sector reform in South Africa to the inexperience of the new government.[17] It cast around for "new sources of influence" and found the New Public Management to be the prevailing wisdom globally, and particularly among the Commonwealth into which South Africa had just been readmitted. However Chipkin and Lipietz (2012) argue compellingly that it was a more coherently motivated decision, even if they find flaws in the reasoning. They find that specific intellectuals within the anti-apartheid movement had been developing their own critique of the Weberian state, rooted in their study of Thatcher's statecraft of the United Kingdom (see also Swilling, 1998 as cited in Tomlinson 1999). These intellectuals presented the New Public Management as a "third way" between private sector-driven development which in South Africa in 1994 would have depended entirely on white capital, regarded with great suspicion by the ANC; and dependence on a bureaucratic state that they associated, not entirely wrongly, with the authoritarianism, waste, and corruption of the apartheid state. Brunette et al. also note the desire of the new government to use state procurement "as a lever to help include previously disadvantaged business-owners in the mainstream economy" (2014, p. 16). Outsourcing was therefore itself to be a developmental policy.

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[17] There is some debate over to what degree South African public service reform post-1994 was an adoption of, or merely borrowed from, the New Public Management (Cameron, 2009). It does not entirely matter, in light of the argument made variously by Hood (1991) and Pollitt et al. (2007) that the New Public Management does not represent a single package, but rather a menu of broadly but not totally congruent instruments from which state reformers choose. There is no doubt that disaggregation of the state as described in the next section was chosen from that menu.

Table 4: Doctrinal components of new public management (Hood, 1991, tbl. 1, emphasis in original)

Doctrine	Meaning	Typical justification
'Hands-on professional management' in the public sector	Active, visible, discretionary control of organizations from named persons at the top, 'free to manage'	Accountability requires clear assignment of responsibility for action, not diffusion of power
Explicit standards and measures of performance	Definition of goals, targets, indicators of success, preferably expressed in quantitative terms, especially for professional services (Carter, 1989; c.f. Day and Klein, 1987)	Accountability requires clear statement of goals; efficiency requires 'hard look' at objectives
Greater emphasis on *output controls*	Resource allocation and rewards linked to measured performance; breakup of centralized bureaucracy-wide personnel management	Need to stress results rather than procedures
Shift to *disaggregation* of units in the public sector	Break up of formerly 'monolithic' units, unbundling of u-form management systems into corporatized units around products, operating on decentralized 'one-line' budgets and dealing with one another on an 'arms- length' basis	Need to create 'manageable' units, separate provision and production interests, gain efficiency advantages of use of contract or franchise arrangements inside as well as outside the public sector
Shift to greater *competition* in public sector	Move to term contracts and public tendering procedures	Rivalry as the key to lower costs and better standards
Stress on private- sector styles of management practice	Move away from military-style 'public service ethic', greater flexibility in hiring and rewards; greater use of PR techniques	Need to use 'proven' private sector management tools in the public sector
Stress on greater *discipline* and *parsimony* in resource use	Cutting direct costs, raising labour discipline, resisting union demands, limiting 'compliance costs' to business	Need to check resource demands of public sector and 'do more with less'

They concluded that what ailed the department was that it housed too many diverse functions. The solution was to differentiate between these functions and to decide which were core to the department's mandate and which were secondary. Units in the department were classified in terms of a tri-partite division: policy-making, regulation and implementation/operations. Policy-making, especially in relation to South Africa's trade and industrial policy, were deemed the priority functions.

Operational units, those that offered a service to the public and that involved a client-face were to be 'delinked' from the department. So were regulatory bodies. The benefits were supposed to be considerable. By shifting these functions out of the department and into autonomous agencies, the [Department of Trade and Industry] was, in effect, placing the new bodies outside the public service. The idea was to free them from departmental 'red tape' so that they could approach their functions in a business-like manner. (Chipkin and Lipietz, 2012, p. 15).

Note that this was a set of decisions taken by a small team of consultants reporting to the Minister of Trade and Industry, not dictated from above: testament to the degree to which New Public Management principles were circulating through the state and its consultants.

The City of Johannesburg: 15 municipal corporations in a trench coat

As described above, when the metropolitan City of Johannesburg was proclaimed it had undergone a long and painful decade of amalgamation from many smaller units. In the same breath as that proclamation, the disaggregation of the City began. In the emergency response to Johannesburg's fiscal crisis an organisational review was launched. This, when "Johannesburg, one staff member observed, has undergone nine organisational reviews and restructurings in eight years" (Tomlinson, 1999, p. 25 citing an unpublished report from Emdon). As Tomlinson describes the findings of this review,

the idea is that Councils should focus on their core activities and non-core activities should be 'cut out or externalised'. Core activities are defined as those required by legislation. It is assumed that these will typically be activities where the local government is the regulatory authority and/or the provider of last resort. In the case of core activities, the consortium argues that whereas the Councils'

obligation is to ensure delivery of the relevant service, the same is not true of actually delivering the service. Service delivery can and often should be outsourced. (Tomlinson, 1999, pp. 26–27).

This would be formalised in *iGoli 2002*, a three-year plan for the establishment of the new City.[18] This plan, apart from tabling the unicity model, proposed an organisational structure wherein "about half of the council's business was placed under utilities or agencies, approximately 10 per cent was privatized or corporatized, and the remaining 40 per cent remained under the old arrangements of the core administration" (Beall et al., 2002, p. 95).

The split matched closely that described by Chipkin and Lipietz above with reference to a national department. The City retained policymaking capacity internally, covered by line departments. It also had to establish significant new internal administrative capacity in the form of a Contracts Management Unit and Shareholders Unit, to administer its subsidiary organisations. Originally there were three legal categories of municipal-owned entities: "utilities", "corporatized entities", and "Section 21 companies", each of which implied a different relationship to the City. Over time, however, the utilities and almost all of the Section 21 companies were corporatized, that is registered as private companies with a single share held by the City of Johannesburg. Johannesburg Parks and Zoo alone remains a Section 21 company, meaning it is registered as a not-for-profit company, with somewhat different financial and reporting requirements. These organisations are arms-length not just by practice but by law: the Municipal Finance Management Act of 2004 specifically prohibits the City's involvement in the functioning of any of its entities; even its delegates to the board must be "non-participating members" (Gumede, 2019). See Table 5 for a summary of Johannesburg's entities and Figure 8 for an overview of its structure today.

iGoli 2002, and the wider project of corporatizing the City, was vigorously contested. The broad left, in and out of the ANC, opposed it as a retreat of the state from its role and responsibility to manage the city. The Municipal Workers' Union and the South African Communist Party opposed it for the jobs cuts it augured and for the revenue the new entities would need to generate from the poor. The civic movement took to the streets with the labour movement, and formed the Anti-Privatisation Forum (Buhlungu, 2006, 2004; Lipietz, 2008; Runciman, 2015). And

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[18] iGoli, meaning "place of gold", is the isiZulu name for Johannesburg.

all parties opposed it on process grounds, as more or less forced through by an unaccountable group of politicians without consultation and over the objections of many in the city (Beall et al., 2002; see also Cartwright and Marrengane, 2016; Woldemariam et al., 2012). Once again, the object of politics was the state itself: its structure and its nature, upstream of any actual policy or projects that were to come.

Table 5: Summary of municipal entities currently owned by the City of Johannesburg

Corporatised Entities	Function
Joburg Water	Water provision and sewerage
Joburg Market	Fresh produce market
City Power	Electricity provision
Joburg Development Agency (JDA)	Special development projects including neighbourhood upgrading and transport nodes and corridors
Johannesburg Roads Agency (JRA)	Planning, operation, and maintenance of roads and associated infrastructure (such as bridges, traffic lights, etc.)
Johannesburg Social Housing Company (JOSHCO)	Provision and management affordable social housing
Johannesburg Property Company	Management and development of City-owned property
Metropolitan Trading Company	Until 2013: Management of markets for informal traders, and minibus taxi ranks Since 2015: Managing the City's fibre internet network and offering "smart city" services to the City.
Pikitup	Solid waste collection
Joburg City Theatres	Management of municipal-owned theatres
Metrobus	Conventional bus services

Section 21 Companies	Function
Johannesburg City Parks and Zoo	Management of parks, cemeteries, and zoo

It is notable, however, that unlike the scalecraft of the unicity debate, the statecraft of corporatisation was not nationalised. Of the 63 municipal-owned entities and agencies as of 2010, 26 were in Gauteng and 15 owned by the City of Johannesburg (Gumede, 2019). Götz et al. compare Johannesburg to Cape Town, which in contrast "generally had a centralising approach to organisational restructuring, rejecting decentralisation to area administrations or corporatised entities as occurred in Johannesburg, and tried to avoid partnership arrangements that would undermine the jurisdictional authority of the city." (2011, p. 21). Johannesburg instead absorbed 15 municipalities and secreted 15 subsidiary companies.

iGoli 2002 became the blueprint for the new City of Johannesburg, which was indeed decomposed into 15 separate entities overseen by a rump bureaucracy. The outcomes of this process of statecraft are varied and complex, but they include major implications for Rea Vaya, as will be shown in the chapters to come. [19] In particular, Rea Vaya's non-appearance in Figure 8 is itself of significance, as Chapter 8 will show.

The statecraft of the contemporary City of Johannesburg was driven by a combination of ideology, technical analysis, and the prevailing conditions into which the new City was introduced. Harrison and Todes (2015) describe the "loosening" of the South African state as apartheid spatial and movement controls gave way to post-apartheid. We can see in the case of Johannesburg another kind of loosening: that of the structures of the state itself into an interrelated, interdependent, but not especially integrated system. Whatever the merits of Johannesburg's structure—chief among them, supposed by New Public Management principles, the creativity, nimbleness, and incentives of corporatised entities in providing services—it created a lumbering, unruly system that would almost immediately prove impossible to coordinate or discipline. This will be shown in the next chapter, which details the first great test of the new City: the planning and implementation of Rea Vaya.

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[19] By way of illustration of the issues that resulted, the Johannesburg Roads Agency for a long time refused to take responsibility for sidewalks, claiming that they fell under the jurisdiction of Johannesburg City Parks and Zoo; it took a decade for the JRA to concede and reluctantly accept custody of the now-derelict sidewalks.

CoJ Line Functions reporting to City Manager, MEs and relevant political portfolios
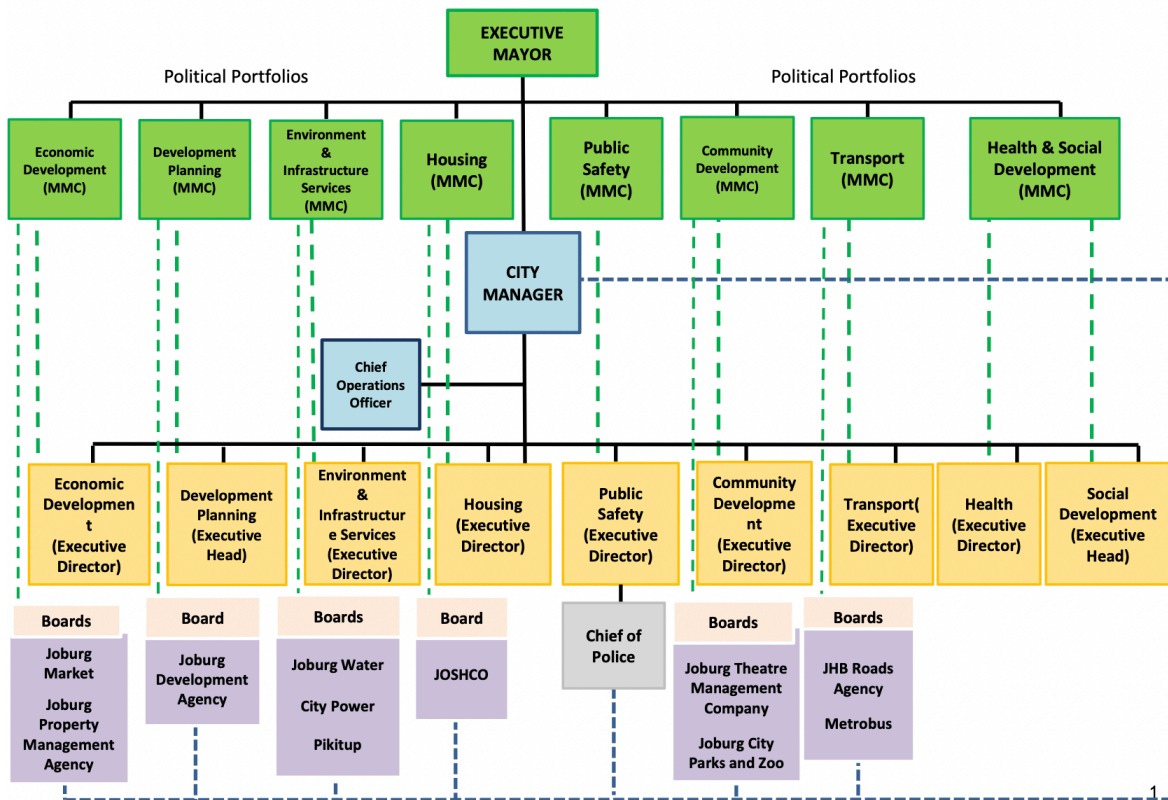
Figure 8: The present corporate structure of the City of Johannesburg (City of Johannesburg, n.d.)[20]

2.6. Conclusion

This chapter set out to do three things. The first was to expound a theory of governance visible particularly but not only in the urban state. That theory, urban statecraft, holds in short that states do not just enact policy: their own structure is a major end to which policy is the means. The state is "a work in progress, constantly being (re)made as actors attempt to cohere and stabilize its structures and devise and implement its imaginaries, strategies and projects" (Pike et al., 2020, p. 794). It went on to link statecraft and its one notable form, scalecraft, to debates and processes of metropolitanisation, that is the establishment of new forms of government at

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[20] "MEs" are municipal entities. "MMC" is member of mayoral council: a political head. "JOSHCO" is the Johannesburg Social Housing Company.

the metropolitan scale. That concept, of metropolitanisation, is not only visible in the history of Johannesburg but in the subsequent tensions over transport between Johannesburg and Gauteng Province, each of which advanced a project of metropolitanisation in contradiction and competition with the other. This is discussed in Chapter 6.

The second was to show the value of the theory of urban statecraft, by reading a history of South Africa, Gauteng Province, and the City of Johannesburg through its lens. Doing so allowed us to make sense of the very many processes in that history where the form and reform of the state was the very point, and frequently a cause for conflict. Urban statecraft lets us see the state as a political object in itself, and not merely a terrain for politics focused on other matters.

Finally, this chapter set up the background for the chapters to come. The establishment of the modern City of Johannesburg in 2000 produced the conditions for the Integrated Transport Plan of 2003, the germination of Bus Rapid Transit in 2005, and the entire shakshuka that followed. With those concepts and that history in place, we now turn to Rea Vaya.

3.   Planning a BRT: Johannesburg's Rea Vaya

So much for the history. Chapter 2 discussed the spatial and particularly urban passenger
transport history of South Africa, Gauteng, and Johannesburg, to the moment of the modern
City of Johannesburg's first council elections at the turn of the millennium. This chapter picks up
from that moment, with a narrower focus: on the origins, the planning, and (some of) the imple-
mentation of Rea Vaya. The main purpose of this chapter is empirical: to introduce the case
study of Rea Vaya, and to lay down some of the key details of the project, some of which are
generally poorly understood (such as its relationship to the soccer World Cup). Much of this ma-
terial will receive closer analysis in the chapters to come. However this chapter also shows how
processes of statecraft played out in the planning of Rea Vaya. Specifically it will show how prior
moments of statecraft, such as those described in the previous chapter, and the resulting insti-
tutional configurations affected the planning and implementation of Rea Vaya.

The chapter begins by examining the origins of Rea Vaya as a project, including its immediate
forerunner, the Strategic Public Transport Network (SPTN). It shows how the SPTN was devel-
oped out of the institutional circumstances of the City of Johannesburg, and how it came to be
"upgraded" to a Bus Rapid Transit system called Rea Vaya. Moving on to the planning, it would
not be possible to cover the extent of technical planning needed, and performed, for Rea Vaya.
The chapter examines instead the institutional arrangements for planning it: the division of la-
bour among parts of the South African state, the tousles between them, and the role of consult-
ants. Finally, the chapter dives deeper into the planning of a specific, significant aspect of Rea
Vaya—the ticketing system—and shows, with reference to its implementation, the conse-
quences of its planning and its structure.

3.1.   The origin of Rea Vaya: SPTN

Rea Vaya did not spring into being fully formed; nor was the BRT concept first introduced by in-
ternational consultants planted in untilled soil. Intensive strategic planning began soon after the
City was constituted, which we can read as a new institution asking the question: what does it

mean to govern transport under these new conditions?[21] Or perhaps: we've got this institution, now what are we going to do with it?

In 2003, a small transport directorate in the Town Planning Department of the City of Johannesburg published the country's first Integrated Transport Plan (City of Johannesburg, 2003a). This, part of a new generation of sectoral planning instruments, was supposed to be situated within a broader process of strategic planning beginning with the high-level, somewhat speculative economic plan, Joburg 2030 (City of Johannesburg, 2001), and descending in scale and scope through a Human Development Strategy (City of Johannesburg, 2005) , a Growth and Development Strategy (City of Johannesburg, 2006a), and a five-year Integrated Development Plan (City of Johannesburg, 2006b). In principle, sector plans should have followed and been informed by these broader strategies. In the event, the urgency of transport reform, the provision of the National Transport Transition Act (NTTA, 2000), and energy and ambition within the bureaucracy drove transport to the fore of the policy process.[22]

The core of the NTTA was a shift from 75 years of supply-driven transport provision, moving workers en masse from carefully prescribed residential areas to their nominal workplaces, to a demand-driven approach determined by the actual movement needs or wants of urban residents: a shift equivalent to "a huge turning of the whole […] aircraft carrier" of mindset and policy[23]. The breakdown of apartheid movement controls in the 1980s and 1990s and resulting shifts in urban population distributions had left legacy buses and trains servicing routes and commuter patterns that no longer existed, or that existed in diminished or altered form, with much of the slack picked up by the minibus taxi industry. The rationalisation of existing transport services was a pressing issue. In 1999 the National Department of Transport had funded a project, first to prepare a Current Public Transport Record (CPTR, an early digital transport database) for Johannesburg and its neighbouring municipalities, and then to integrate

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[21] As well as housing, spatial planning, electricity provision, and so on.

[22] Interview with former municipal official, 8 June 2017; Interview with former municipal official, 16 May 2018. All interviews here and hence are anonymised, both for reasons of confidentiality and because interviewees' identities are not material, beyond the organisation they worked for in the period they are discussing.

[23] Interview with former municipal official, 8 June 2017.

them into an overall provincial CPTR (Vorster et al., 2000). This was the basis for an exercise focused entirely on rationalising the bus network to demand pattern: "by rationalisation is meant a "chipping away" at existing inefficiencies, not a fundamental restructuring"[24]. Its modesty therefore reflects the institutional balance of forces at the time: the transport function was held jointly by a new Province flexing its muscles and an interim municipal government soon to be superseded.

The new metropolitan City of Johannesburg, however, had greater ambitions. Its Integrated Transport Plan (City of Johannesburg, 2003a) proposed a total restructuring of the system. Its core was a concept it called the Strategic Public Transport Network (SPTN), which would unify all existing and future public transport in the city. Apart from some supportive infrastructure, such as bus lanes, this would primarily take the form of mode-neutral contracting for each transport route in the city: the City proposed to set a price for each passenger transported from A to B, and allow bus operators, minibus taxis, and everyone else to compete for the contract to provide the service. Routes would be determined by passenger demand surveys, and the system would be provider-neutral between public and private operators.[25] In this last way in particular, with public operators competing on an open market, it reflected the influence of the New Public Management that had shortly before shaped the structure of the City.

The SPTN, at its core, was a shift away from command-and-control provision of public transport as had characterised Johannesburg's apartheid history, and to an approach that was focused on passenger demand and highly flexible in the way that transport was actually provided to riders. These characteristics would not survive the advent of BRT, whose partial correspondence to the SPTN will be discussed shortly. A key SPTN feature that would survive was a focus on its "flagship route" linking passengers from Soweto in Johannesburg's southwest, through Parktown, to Sandton in its north: this would become the exact route of Phase 1 of the BRT. See Figure 9 for the route map of the SPTN's flagship route.

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[24] File 33_02, Terms of reference for Bus Rationalisation Assessment, 23 February 2000.

[25] Interview with former municipal official, 8 June 2017.
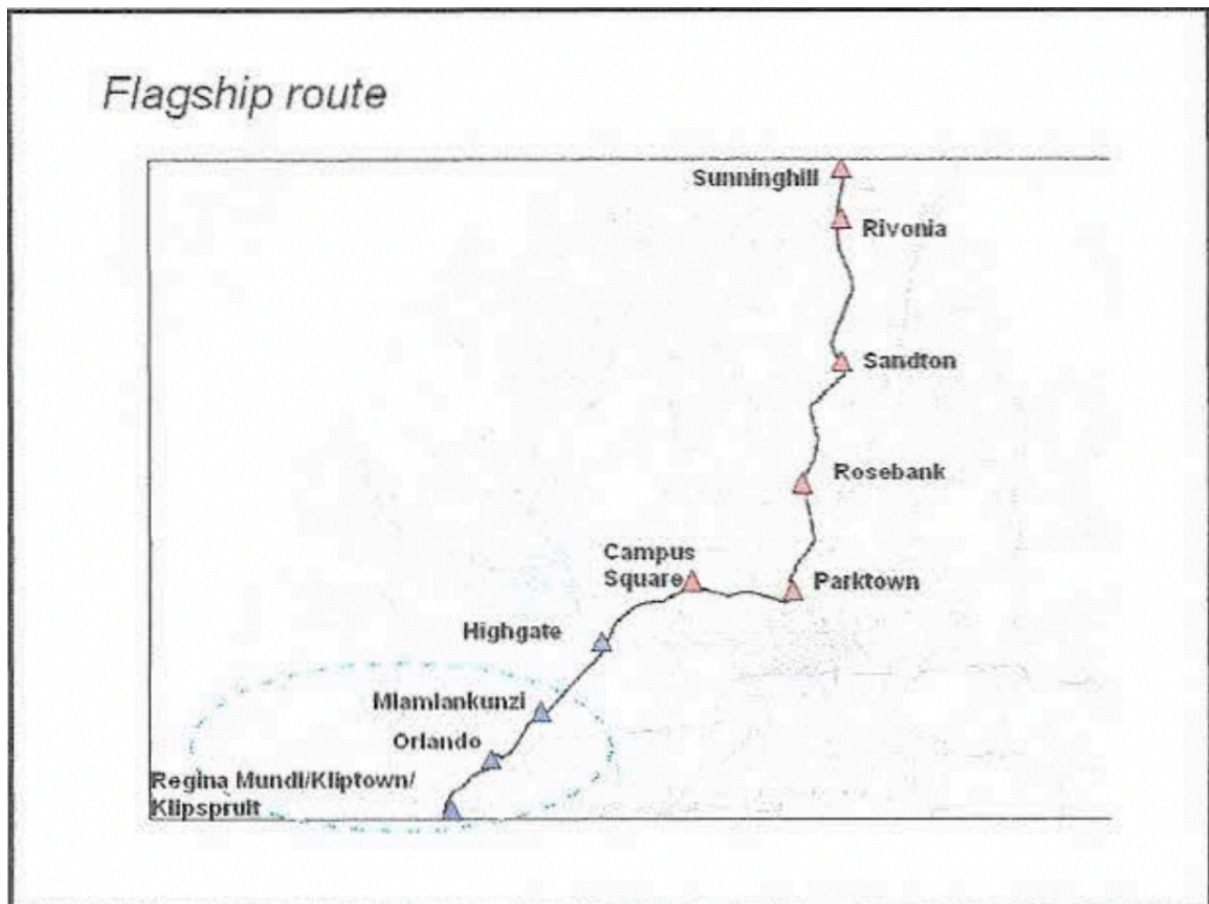
Figure 9: Taxi reform proposal in SPTN, 2003.[2627]

Implementation of the SPTN was underway by 2004, mostly in the form of consultations; by 2005 dedicated lanes for buses and minibus taxis were being built along the flagship route. These were traditional "curbside" dedicated lanes, not the median (middle of the roadway) lanes prescribed for BRT.

At the moment that BRT arrived on the scene, therefore, the City of Johannesburg had planned and started to implement a bold restructuring of municipal transport, as the first major initiative of its newly constituted form. The plan was developed internally by a small directorate whose

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[26] File 36_02, "How will the SPTN flagship project affect minibus-taxi operations: existing and potential new routes", 6 April 2006.

[27] The Regina Mundi–Parktown route would end up, unchanged, in the BRT alignments; the Parktown–Sandton route would be halfway planned for Phase 1C of the BRT, but abandoned for an alternative in the face of political resistance.

energy and ambition—and the pressing task before them—almost immediately resulted in the City restructuring and elevating it into a full sector department. The wind was at Johannesburg's back to plan a transport system fit for a new South Africa.

3.2. The express bus from SPTN to BRT

In 2006 the "BRT evangelical society" (Rizzo, 2017) came to town, primarily in the form of Lloyd Wright, the Institute for Transport and Development Policy (ITDP), and Bogota's former mayor Enrique Peñalosa.[28] In the words of a local official who was integral in spreading the good word of BRT:

> [ITDP] came here to Johannesburg and they said, Why are you building this low quality bus network, we should be building a high quality BRT. And the broad storyline was, you know, in Bogota, there are no subsidies right? And this thing runs without subsidies. And the same thing can be achieved here.[29]

This is not to say that BRT was unknown in South Africa before 2006: Curitiba and Bogota had featured as case studies in town planning curricula and through the circulation of professional knowledge. As one official described,

> I haven't been to Curitiba, but every other planner I know has been (*laughs*) on a pilgrimage to Curitiba. So I knew about BRT as it was emerging in those days, but very theoretically [...] it was really once Bogota was happening that I became more tuned in to BRT as a transit solution.[30]

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[28] As an official recalled "[Wright] came around and he pushed BRT. He had a little NGO that was trying to support BRT around the world." (Interview with former municipal official, 8 June 2017).

[29] Interview with former municipal official, 15 June 2017. The explicit claim that BRT requires no operating subsidy in Bogota, and either explicit or implicit claim that this is a general or at least common feature of BRTs, is a key part of the story. The first claim is at best a half-truth, applying only to the very first, highest-demand corridors while subsequent extensions to the system immediately required subsidy; the second claim is outright false, as the vast majority of BRTs, including many of the most storied examples, require operating subsidies (Guzman and Hessel, 2022; Paget-Seekins, 2015).

[30] Interview with former national official, 4 May 2018.

A key argument in favour of BRT as a mode was not only that it was good and (operationally) cheap, but that it could be implemented incredibly quickly, well within a single mayoral term: all the benefits of ambitious infrastructure, and you get all the credit too. As an early and enthusiastic conference paper read: "Transmilenio, again, was implemented and running commercially in less than 18 months from completion of the original study." (Willumsen and Lillo, 2005, p. 710).

This promised speed of implementation was something of a (very partially) self-fulfilling prophecy. Wood (2014a) documents how a series of meetings and relationships among a few promethean individuals carried the flame of BRT throughout South Africa. Within six months the ideas and arguments of BRT had been thoroughly circulated and mainstreamed throughout national government and key municipalities; study trips had been undertaken to visit BRTs in Ecuador and Colombia; and the South African chapter was officially opened in the story of BRT (Wood, 2014b).

It is hard to overstate the speed with which BRT coalesced from idea into project. In September 2006, Johannesburg's Mayoral Committee recommended:

- the Moroka Police Station to Lenasia and Orange Farm SPTN corridors, be approved in principle for Phase 1 BRT implementation
- That the Lead Official: Transportation[31] seeks funding for a broad-based feasibility study
- That the Lead Official: Transportation engages with the National Department of Transport with a view to moving the existing SPTN funding to BRT
- That the Lead Official: Transportation initiates consultation with the incumbent bus and taxi operators on the north-south corridor with a view to moving towards a single BRT operating company on this corridor
- That the Lead Official: Transportation engages with the Johannesburg Development Agency and Johannesburg Roads Agency with a view to

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[31] At the time this was Bob Stanway, who had led the ITP drafting and subsequently been elevated to head the City's newly-formed Transport Department.

> re-negotiating some of the existing SPTN projects, and moving them to
> BRT

> - That the Lead Official: Transportation reports back to Mayoral
>   Committee in two months on the outcome of the above broad-based
>   feasibility investigation.[32]

I quote this at length to note two key details. First, that a number of key decisions around the project had already been made, within three months of the idea being floated. The BRT was already to supersede the SPTN. It was to be served by a single operating company per route, replacing the fragmented service of myriad taxi operators and bus companies. And this was to be just Phase 1 of an ambitious, city-wide programme of reform. Second, these decisions *preceded* a feasibility study of the proposal. This haste would lead directly to Rea Vaya's lack of success, both by conventional measures and in terms of institution-building. Chapter 7 will deal with this at length. The feasibility study, funded and conducted by ITDP and Lloyd Wright, was delivered in November 2006 and received formal approval from the Mayoral Committee, and shortly after from the city council. The approved report noted a set of issues whose significance will be apparent in the events to come.[33]

First, it specified that the main departure from the SPTN was as

> an effective alternative for engaging the minibus taxi industry in a positive
> manner. By placing the minibus industry on a level playing field with other
> subsidised bus operators and by offering higher financial returns without
> operational subsidies, Rea Vaya is potentially a significant win for the City, the
> customers, and the operators.

The SPTN, although involving a levelling of the playing field, was mode-neutral; BRT in contrast was proposed to involve a transition programme specifically targeted at incorporating the minibus taxi operators into the system, to be able to play an operational role alongside legacy conventional bus operators.

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[32] Digital File, Mayoral Committee report, 11 November 2006.

[33] Digital File, Mayoral Committee report, 11 November 2006.

Second, it proclaimed that

> The overall goal of the Rea Vaya initiative is to improve the quality of life of Johannesburg citizens through the provision of a **high-quality and affordable public transport system**. The long-term vision is to develop a system that places over 85 percent of Johannesburg's population within 500 metres of a Rea Vaya trunk or feeder corridor. (emphasis in original)

This ambitious target represents the long-term vision for Rea Vaya through at least its first two phases of implementation, and nominally until time of writing. The significance of its clarity and ambition has implications for how we need to measure Rea Vaya's success—again, in Chapter 7.

Third, it claimed that

> Rea Vaya is one of the few options that can deliver a superior public transport system in time for the 2010 FIFA Soccer World Cup as well as leave a lasting legacy for Johannesburg's citizens. Under the projections set forth in this study, phase I Rea Vaya will require one year of planning and approximately one year of construction. The major phase I milestones are:
>
> - Complete phase I planning by September 2007
> - Secure full phase I financing by January 2008
> - Initiate Rea Vaya phase I operations by April 2009.
>
> Rea Vaya is scheduled to be inaugurated two months prior to the start of the Confederations Cup in April 2009. The system should have over one year of tested operation prior to the start of the World Cup in June 2010.

Planning for SPTN had predated the awarding of hosting the World Cup to South Africa, and so was structured like an incremental long-term plan for transport reform. The international boosters' claims of an 18-to-24-month implementation time for Rea Vaya—a claim of pure conjecture, not to say utter fiction—is visible here catching the ear of policymakers. This should not be read as pure naivete on the part of the City, however. As Gasper argues, "*ex ante* conceptions of costs and benefits are often part of bids for resources, made by potential 'doers' (executors) and submitted to prospective financiers." (1986, p. 469). Chapter 7 will further explore the idea of cost/benefit arguments as bids and show its wide implications. Note also the specific and very

ambitious timeline in the quote above: this would almost immediately fall away, for reasons that the rest of this thesis will discuss.

As directed in this report adopted by the council in September, the Lead Official: Transportation (in practice the Executive Director and Head of Department) sought funding. The Clinton Foundation granted $250 000 from an existing commitment to Johannesburg, brokered by and channelled through its existing transport-sector partner, ITDP. ITDP was not only instrumental in the adoption of BRT in South Africa, but in its financing and—through its own staff and consultants—its design and execution. It could use its role as interpreter of international "best practice" to guide the project to be attractive to the global development institutions that trusted it as an intermediary:

> ITDP has been a partner in the Rea Vaya development process, and thus the organisation will be particularly helpful in aligning the interests of the Clinton Foundation with the funding needs of the Rea Vaya project.[34]

Meanwhile KfW, the German development bank, granted through its implementation arm GTZ €2m for further planning. A large grant from the UNDP-administered Global Environment Fund paid for the legal and marketing workstreams for some years. An October 2007 overview document and accompanying presentation notes that

> As far as the operational funding is concerned the following operational funding is on budget, and various work packages are shortly to be awarded to service providers: -

Clinton Foundation	R1,7m
PTIF [National public transport funding] (07/08)	R5,0m
City of Johannesburg (07/08)	R4,3m
TOTAL 100% SECURED	<u>R11,0m</u>
KfW / GTZ (2m Euros)	R19,5m
UNDP / GEF ($3,2)	R22,4m [35]

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[34] Digital File, Mayoral Committee report, 11 November 2006.

[35] File 04_07, Rea Vaya Phase 1 Overview, 23 October 2007; File 04_10, Summary report on Rea Vaya, 2008. The total, R63,9m, was worth about $9,3m in October 2007.

Notwithstanding this budget, for a long time the project had to rely entirely on donor money:

> that [KfW/GTZ] grant paid for that work because at that stage we could get no money from the City, nothing, absolutely nothing. So we were running on the smell of an oil rag honestly for about two years between about 2005/6/7/8 almost […] it was a hand to mouth type of existence completely.[36]

> We were terribly short of money though. […] So we had to then borrow and steal. We managed to get a grant from the Clinton Foundation and we got a grant from the German Development Bank and people like that, to keep us going until National Department [of Transport] was able to come and give us some money.[37]

The Clinton Foundation paid ITDP to produce an operational plan, for which ITDP subcontracted some of the work to Logit Consulting, for modelling, and Lloyd Wright. For a transport project such as Rea Vaya, this is a technical document that starts with detailed demand modelling, from which it derives a number of required seats and their distribution throughout peak and off-peak periods, which in turn informs how many buses are needed, of what size, running on what schedules. From this can be developed a financial model and business plan based on the cost of running these buses, and the revenue expected from the modelled demand. The result is a fully specified route-by-route plan: this many buses, of this size, on this schedule, bringing in this much revenue, and costing this much to run. These then inform subsequent decisions about bus design, station design and placement along routes, and so on. This process, as it was planned for Rea Vaya, is represented schematically in Figure 12: note the basically linear structure as it moves from phase to phase. As Chapter 7 will show, this ideal process is not a useful guide to how such projects are planned in reality, and this discrepancy has wide implications for how they need to be conceptualised, designed, implemented, and evaluated.

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[36] Interview with former municipal official, 8 June 2017.

[37] Interview with former municipal official, 16 May 2018.

Interaction with City	Project Activities	City Task Activity

Phase 1

Local representation and input

Site visits
- Existing service patterns
- Opportunities and Constraints

Data Collection/ surveys
Demand modelling
O-D patterns

Confirmation of:
- Trunk routes
- Feeder routes

Passenger Demand analysis

Consultation and feedback

Operating concepts & Design options

Confirmed Network Plan

Input to:
- Station location
- Depot & terminus location

Phase 2

Options discussion on:
- Fare structure and methodology
- Operator/ Institutional arrangements

Operational Design
- No. routes
- Route length (km)
- Service Frequency
- Service period

Traffic modelling
- Traffic Management & Intersection design
- Signalling & phasing
- ITS interface

Discussion on:
- Affordability/ Fare levels

Demand/Revenue   Operational Costs   Bus sizing

Input and liaison:
- Vehicle design / features & specifications

Phase 3

Consultation and feedback

Operational Cost Forecast
Sensitivity testing / Options

OPERATIONAL PLAN

Further studies and actions:

Business and Institutional Plan

Detailed Design & Architecture Tendering and construction

Capital Cost and Financing Implications

Implementation Plan (service development)

Figure 4: Schematic representation of Rea Vaya operational plan project.[38]

3.3. Consultants and the contract state

South Africa is, by some accounts, a "contract state". The term as applied to South Africa originates with Brunette et al. (2014) who trace the country's history of public-sector procurement, starting with the tightly-controlled but highly discretionary (and discriminatory) use of procurement under apartheid, through the New Public Management-influenced reforms of the 1990s and 2000s as described in Chapter 2, to the drastically decentralised and largely uncontrolled situation in the 2010s. In 2012/13 at least 42 percent of government spending, outside of parastatals and local government own revenue, was spent on privately procured goods and services. This procurement had increased on average 10 percent per year in value since 2009; and 80 percent of this spending was by local and provincial government (Brunette et al., 2014, p. 8).

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[38] Digital File, "Rea Vaya operational planning" [Presentation], 20 July 2007.

The distinctive features of the contract state, per Brunette et al., are:

- Service delivery is increasingly outsourced, through tenders, to private provision;
- The role of public servants is increasingly, if not primarily, to manage contracts with other organisations, whether private, parastatal, or public;
- The procurement apparatus is enormously fragmented and decentralised, resulting in major problems of coordination and oversight.

The Rea Vaya, starting in 2006, fell squarely in the middle of this process of procurement reform. From 2003 the procurement system had been dramatically decentralised and proceduralised where before it had been centralised and discretionary. The State Tender Board was dissolved in 2009, and the Office of Chief Procurement Officer was introduced in 2013 to discipline the resulting system. This closely tracks the development of Rea Vaya, first undertaken in 2006, Phase 1A first running in 2009, and Phase 1B (the last yet completed) running from 2013. Accordingly, we can see in it a combination of the structurelessness of the reform period and the "contract state" that eventually resulted. Brunette et al.'s primary interest is in the processes of corruption and class formation that result. However as they point out, in the contract state, "The quality of service delivery often depends on how well these contracts are negotiated and enforced." (Brunette et al., 2014, p. 9).

This closely resembles Raco's (2014; see also Raco et al. 2017) own account of the contract state. Raco describes the regulatory state, which involved the state favouring the largest businesses for their legibility and ability to be regulated, as giving way to a contract state where the same regulation could (and had to) be done ad hoc through contracts with businesses of all sizes. This periodisation—and the associated political economy—does not apply straightforwardly to South Africa. The 1990s and 2000s there saw the rise of both the contract state and the extraordinarily rapid and determined adoption of the independent regulator model: a separate project of statecraft and one for another research project (but see Muller 2013).[39] In South

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[39] The National Electricity Regulator was established by legislation in 1995; the Competition Commission in 1998; the Civil Aviation Authority in 1998; the Micro Financial Regulatory Commission in 1999; the Independent Communications Authority of South Africa in 2000 (merger of the Independent Broadcasting

Africa, rather than being alternative modes of privatisation, the contract state and the regulatory state grew as one.

Nevertheless Raco's contract state is plagued by many of the same the pathologies that will momentarily be visible in the story of Rea Vaya. He describes this mode of government business as requiring "the costly mobilization and empowerment of experts, including lawyers and consultants, many of whom then become bound up in networks of regulation and delivery themselves." (2014 p. 5). Large complex projects

> are subdivided and broken up into vertically organized, deliverable units. State institutions then act as project commissioners and set the parameters for projects through regulations and objectives. To make projects more manageable, regulations and contracts are used to appoint 'gate-keeper' private organizations and project managers. They, in turn, subcontract out their activities to a range of businesses who report upwards through a hierarchy of reciprocal payments and responsibilities. These gate keepers will usually be MNCs specializing in construction management. Their deployment represents a rescaling of political power (Raco 2014 p. 6)

This is precisely the case in Rea Vaya, where the particularities of negotiation and enforcement were enormously consequential for the outcomes of the project and are here revealing of the functioning of the contract state. The rest of this chapter is a close examination of two sets of contracts: those for the consultants who planned the system, and those for the various organisations that implemented it.

Planning: who consults on the consultants?

Rea Vaya was planned almost entirely by consultants. The need to define a specification of work for a consultant, even one who is feeding into a much larger set of processes over a period of years, requires the articulation of their individual work as a project, with a beginning (inception),

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Authority, 1993, and the South African Telecommunications Regulatory Authority, 1996); the Railway Safety Regulator in 2002; the National Energy Regulator of South Africa in 2004; the Ports Regulator in 2005; and so on.

middle (implementation), and end (close-out). Specifying a contract sufficiently to procure a consultant, or at least to get through the "supply chain" department, requires the solicitation of a plan for the project, which may be itself to plan a larger piece of a larger project, and so on and on.

Rea Vaya, accordingly, was dependent from the start on a large and initially unruly group of consultants. The speed of recruitment, lack of structure into which they were recruited, and various funding streams and reporting lines resulted in early conflict over roles and reporting. One international consultant was recruited and before even being contracted inserted themselves in various parts of the project at a high level until being reigned in and assigned to a specific, narrow workstream.[40] Notably, this consultant's objections to the direction of the project included a question of how "global best practice" should be operationalised in the specific context of Johannesburg, to which the other consultants remarked—twice—that he "hasn't even been to South America".[41] This is seemingly understood to discount, perhaps heavily, the value of his ideas about BRT—despite the praise heaped on him otherwise by fellow international consultants: "best BRT guy in wld" [sic].[42]

If nothing else, this shows the degree to which international expertise flows based on word-of-mouth and reputation among a small group of insiders; some of the complexities of hiring independent expert consultants outside of a bureaucratic hierarchy; and the degree to which South American experiences of BRT are presented as ideal types to be studied.[43] In the mid-2000s there was a small number of these consultants playing an outsized role in BRT adoption and design globally, who Rizzo (2017) calls the "BRT evangelical society" and Jacobsen (2021b) calls the "BRT-cracy". With a few exceptions due mostly to death and retirement, many of these same consultants play the same outsized role today. These are dynamics of the policy mobility of BRT

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[40] File 02_16, "Issues with Viva Report on SA BRT (Johannesburg)", 9 October 2007; File 30_26, Correspondence among consultant team, 26 October 2007; File 30_31, Meeting notes, 9 and 13 November 2007; File 02_17, Meeting notes, 29 February 2008.

[41] File 02_16, "Issues with Viva Report on SA BRT (Johannesburg)", 9 October 2007; File 30_27, Meeting notes, 2 November 2007.

[42] File 02_17, Meeting notes, 29 February 2008.

[43] We might say like sacred texts, to push the evangelical metaphor a little further. Not for nothing are the top international consultants—not just on BRT—sometimes referred to as "gurus".

whose full consequences, often negative, are only glancingly covered if that by the definitive study on the topic (Wood, 2022).

Throughout the project there was a steady tension between the role of local and international, internal and external capacity on the project team. Early ITDP correspondence about the project took for granted, as the City seems to, the need for a large team of consultants to plan and implement a BRT, before handing operations over to a dedicated agency.[44] Some of the international consultants are very prescriptive about the project. However as a May 2007 email and presentation from ITDP made clear:

> It is not possible to delegate the management of this project to private hands (consultants).
>
> It is just like having and contracting the best musicians for an orchestra but without hiring a conductor. Music will be played, but it will not be the symphony that the government hopes for.
>
> The Department of Transportation should nominate and hire, as soon as possible, a director, who preferably should be a government official, in order to work for the government exclusively on the corridor 24 hours a day with the objective of giving direction and deadlines to each one of the consultants.[45]

In light of their later comments, it seems we should read the emphasis to be on the word "management". They are motivating against both a consultant manager, and (implicitly) a PPP: the project director, singularly, must be a civil servant. Their later correspondence makes very clear that the "best musicians" are to be hired from abroad and paid in hard currency. For a time the project was led by the Executive Director of the City's Transport Department, but these two roles proved to be too onerous for a single person. Some time into the project the Executive Director stepped nominally downwards into the Transport department, to be full-time director of the BRT project. A new head of transport for the City was recruited from Gauteng Provincial Government. Meanwhile the role of GTZ was formalised: the entire "expert and training programme", as the team of consultants would be called, would be run through GTZ under an

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[44] e.g. File 02_20, Correspondence among consultants, 1 March 2008.

[45] File 02_14, "BRT Planning and Institutional Issues: How do we get from here to there?", June 2007.

overall programme lead. This lead would nominally be merely the first among the consultants, but in practice would control the BRT project entirely. Partly at the urging of ITDP, a South African transport consultant of long standing and association with the project director was appointed to the role.[46]

> [she] needs to be brought on immediately by what ever means necessary, and she needs to be empowered in relation to the other GTZ contractors and thereby held accountable for deliverables. That means that she needs to be able to hire and fire them. At the same time, deliverables need to be reasonable given the limited timeframe.[47]

The staffing contingent on the GTZ contract shifted through several iterations of the project contract, and then the final contracted team seemingly differs from that schedule. Table 6, from the project close-out report, lists who was actually contracted to which roles. This reflects the staffing schedule after a number of iterations, often in response to contingencies of the project. For example, the original 2007 operational plan was drafted by Logit, a Brazilian transport consultancy, under contract to ITDP. GTZ then contracted Logit in 2008 to refine the operational plan, plan the sub-phases (1A, 1B, and so on), and revise the plans in response to operational contingencies. In 2010 additional capacity was brought on in the form of local consultants, Gary Hayes and Neil Hickson,[48] to substantially revise the operational plans for Phase 1B and what would become 1C, in response to route changes. Logit remained on the project in a support role.

This GTZ structure formed the Project Management Unit, a parallel structure to the actual operational structure of the Rea Vaya (see Figure 10 below). This reflects a distinction between Rea Vaya *qua* project, and Rea Vaya *qua* public service. A project has a beginning and—in principle—an end, and a roster of consultants and service providers tasked to deliver specific enumerated outputs such as operations plans, dedicated lanes, and bus depots. The latter, a public service, requires a contingent of permanent staff with ongoing service targets or other performance

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[46] This project manager was Collen McCaul, whose archive has been so invaluable to this project.

[47] File 02_10, ITDP memo to City officials, 31 March 2008.

[48] Neil Hickson had possession of Collen McCaul's physical and digital archive, which he made available in its entirety for this project.

measures. For the first years of the Rea Vaya, it was straightforwardly a project: "First and fore-most, Rea Vaya itself is currently a project inside the Department of Transport."[49]

We can therefore say that the use of consultants, even international consultants, for some or all aspects of technical planning can be defended on its own terms. However, this is a design choice that is underappreciated as such. Rea Vaya was proposed to be designed by consultants and then handed over to a newly capacitated City institution to run. As a result, at most the City comes to house the skills to run the system, but not to build it. With respect to transport infra-structure, and the specific case of Rea Vaya, this means that for every successive phase the City is left dependent on consultants. Indeed this applies to a much broader range of infrastructure. This will be explored with its full implications in Chapter 7.
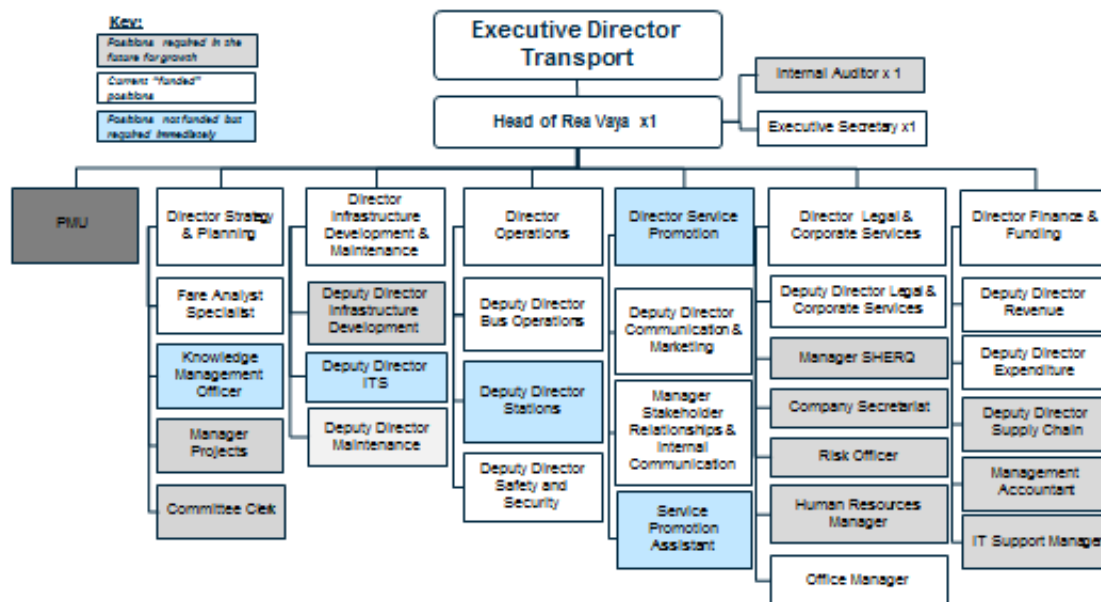
Figure 10: Rea Vaya High-Level Organogram (Proposed), from Final Report, June 2011

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[49] Digital File, "Draft Background Report for Critical Decisions Workshop Fall 2009", 13 September 2009.

Table 6: Final list of consultants contracted by GTZ on Rea Vaya, June 2011.[50] * denotes "Foreign-based consultants"

	Name of expert and/or firm	Role in project/area of speciality
1	Colleen McCaul (Colleen McCaul Associates)	Full-time GTZ Project Manager for duration of project
2*	Frits Olyslagers	Fleet specs, depot planning, service planning, AVL and bus management, BRT system andcontract procedures, assistance with BRT operating company formation and establishment
3*	Fabio Gordillo	Fare system design, operations and businessmodel and AFC systems
4*	Edgar Enrique Sandoval	System roles and responsibilities, business plan (contracting framework), contracts (all types) design and implementation, institutional arrangements, strategic advice
5*	Oscar Diaz (ITDP)	Marketing and communications
6*	Dr Walter Hook (ITDP)	General strategic advice, business plan, operator negotiations, system financials, social, economic and environmental monitoring and evaluation
7*	Wagner Columbini Martins (Logit)	Operational Design; modelling;
8*	Rafael Sanabria Roja (Logit)	EMME/2 modelling; fare modelling
9*	Diogo Barreto (Logit)	Financial Modelling
10*	Claus Nakata (Logit)	EMME/2 network and GIS
11*	Chris Kost (ITDP)	Social, Economic and Environmental monitoringand evaluation
12	Charles Fuller (Axios Consulting)	Operator Business Plan
13	Manuel Sampaio (Axios Consulting)	Operator Business Plan

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[50] Digital file, "World Cup 2010: Bus Rapid Transit System Johannesburg Training and Expert Programme. Final Report.", June 2011.

	Name of expert and/or firm	Role in project/area of speciality
14*	Dr Axel Friedrich	Transport and environment
15*	Pedro Szasz	BRT traffic engineering
16*	Paul Evans (InfraAsia)	ITS
17*	David Cross (InfraAsia)	AFC
18	Dr Christo Venter	Non-motorised transport and accessibility for people with disabilities; system capacity
19	Dr Pine Pienaar (Nyeleti Consulting)	Project Management
20	Mongamo Jantjies (Nyeleti Consulting)	Project Management
21	Mike Sankey (Mike Sankey & Associates)	Security strategy and threat analysis
22*	Manfred Breithaupt (GTZ)	Capacity Building, TDM, Strategic Advice
23	Neil Hickson (Neil Hickson Transportation and Traffic Planning)	Operational Design; EMME/2 modelling
24	Gary Hayes (Retque)	EMME/2 modelling
25	Hunter van Ryneveld (and Second Harvest)	Advertising revenue assessment
26*	Carlosfelipe Pardo	Training and capacity building
27	Jacques van Zijl	Training and capacity building
28	Sammy Mafu	Marketing and communications
29	Ray Moletsane	Marketing and communications
30	Itumeleng Motse	Marketing and communications
31*	Dr Juerg Gruetter (Gruetter Consulting)	Carbon credits and CDM process
32*	Susana Ricaurte (Gruetter Consulting)	Carbon credits and CDM process
33	John Brand (Conflict Dynamics)	Negotiations Skills Training

Implementation: New Public Mismanagement

Apart from the clutch of consultants planning the project, the implementation was contracted out. Rather than going to private contractors, however, contracts were signed with three of the Municipal-Owned Enterprises whose origins were described in the previous chapter. The Johannesburg Development Agency (JDA) was contracted to build the physical infrastructure. Established in 2001 to drive urban renewal, the JDA had by 2006 built a reputation for the successful delivery of ambitious capital projects.[51] Unusually for Johannesburg's municipal entities, the JDA only ate what it killed: its core operations relied on management fees from its capital projects. It was accordingly hungry for big projects, and eager for the Rea Vaya infrastructure contract.[52]

This was a snub to the Johannesburg Roads Agency (JRA), into whose formal mandate the infrastructure—especially the roadways—should strictly have fallen. To pacify the JRA, or at least purchase its assent, it was contracted for the Intelligent Transport System (ITS).[53] This included components such as an Advanced Public Transport Management System (inter alia, a digital system to track and dispatch buses), an Automatic Fare Collection (AFC) system (the infrastructure for digital ticketing), and the construction of a high-tech control centre from which the entire Rea Vaya system would be controlled. This would prove to be an enormously consequential concession, on which more later in the chapter.

Finally, the Metropolitan Trading Company (MTC) was contracted to provide station management. The MTC was originally established and still mandated to manage City-owned taxi ranks and markets. Integral to the City's plan for securing assent, or at least compliance, from the taxi industry that it intended to displace from Rea Vaya's routes was to offer alternative employment to affected industry workers. The MTC was thought to be more amenable than a private company would be to hiring workers from a designated pool, and was contracted for this reason.[54]

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[51] Interview with former JDA official, 16 May 2018; Interview with former municipal official, 15 June 2017; Interview with former municipal official, 16 May 2018.

[52] Interview with former JDA official, 16 May 2018.

[53] Interview with former JDA official, 16 May 2018.

[54] Digital File, Comments on Draft Background Report for Critical Decisions Workshop, 13 September 2009.

These contracts were arranged into 26 workstreams—a very large number—which were under-taken in parallel, outside of normal order. Here, as with the consultant contracting, it is clear that the project was undertaken with haste—explicitly so, to achieve extremely tight timelines. According to an August 2008 report to the Mayoral Committee:

> Because of the huge amount of work involved in implementing Phase 1 of the Rea Vaya BRT system, and the fact that the Phase 1A and Phase 1B completion dates (2009 Confederations Cup) and 2010 FIFA Soccer World Cup) are immovable, many the [sic] project's 26 different work streams have had to be run in parallel. The conventional situation would have been to run many of the key work streams in sequence.

> The running of these key work streams in parallel inevitably increases the project risk, in the sense that it is assumed that these key work streams will all come together in their completed forms just before commencing operation in May 2009.[55]

Significant coordination and sequencing problems resulted directly from running in parallel a process that should have been run instead in sequence. The JDA's portion of the project alone involved over 100 private subcontractors, including work teams on multiple routes and stretches of infrastructure at once. Much of the design and implementation of the infrastructure depended on decisions that sat in other workstreams—the operational plan—and this problem was raised in joint steering committee meetings and by consultants:

> Here are teams that are setting detail design work and contracts in place without the necessary concept designs being consolidated - and this will hold up progress in a major way.

> Under normal practice, a concept and feasibility design project would have delivered this, but the process of the ITDP Scoping Study and Operational Plan (which did not have a budget for concept design) has resulted in the design work not being done. Putting a concept design team together to consolidate the design

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[55] File 02_04, "Report On Proposed Amendments to Phase 1A of the Rea Vaya Bus Rapid Transit (BRT) System", 7 August 2008.

(based on the scope and operational plan) is now a critical issue.[56] (emphasis in original)
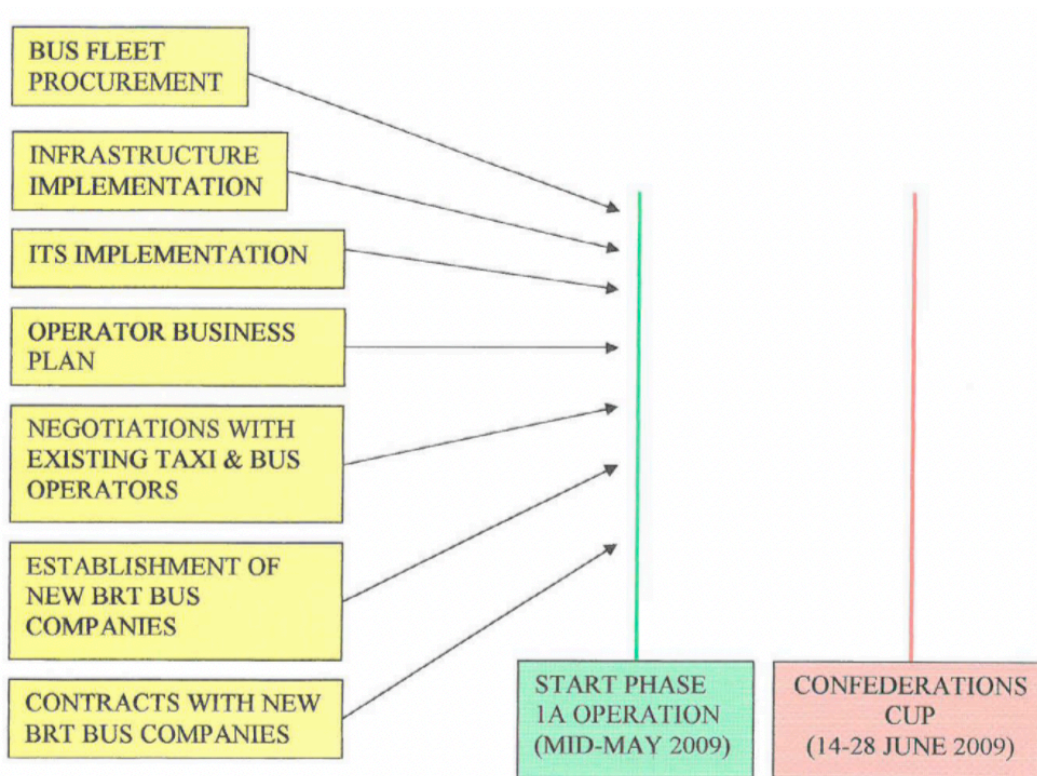
Figure 6: "Diagrammatic illustration of parallel work streams"[57]

The joint steering committee where these concerns were raised brought together representatives from: the Transport Department's Rea Vaya team, the three implementing organisations in various capacities, other parts of the City of Johannesburg—such as the Environment Department, and the 2010 [World Cup] Office—and some core consultants. A similar, smaller structure formed the technical committee, focused primarily on the JDA and the Transport Department and to an extent the JRA. There was also a political oversight committee, in the form of a BRT mayoral subcommittee: "there was a lot of political oversight on all the reports, so every key decision would go to the BRT mayoral sub-committee – unlike any other project in the city […]

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[56] Digital file, Email from consultant to City official, 17 August 2007; see also File 06_10, Minutes of Rea Vaya Steering Committee, 14 May 2008.

[57] File 02_04 , "Report On Proposed Amendments to Phase 1A of the Rea Vaya Bus Rapid Transit (BRT) System", 7 August 2008.

every mayoral committee there would be a report on the BRT on some aspect".[58] This was necessary not least because each of the contracted municipal companies reported to a different political principal. See Figure 11 below for an illustration, from an October 2009 evaluation of the project, of the complex implementation arrangements.

Current Rea Vaya Structure
Significant accountability issues
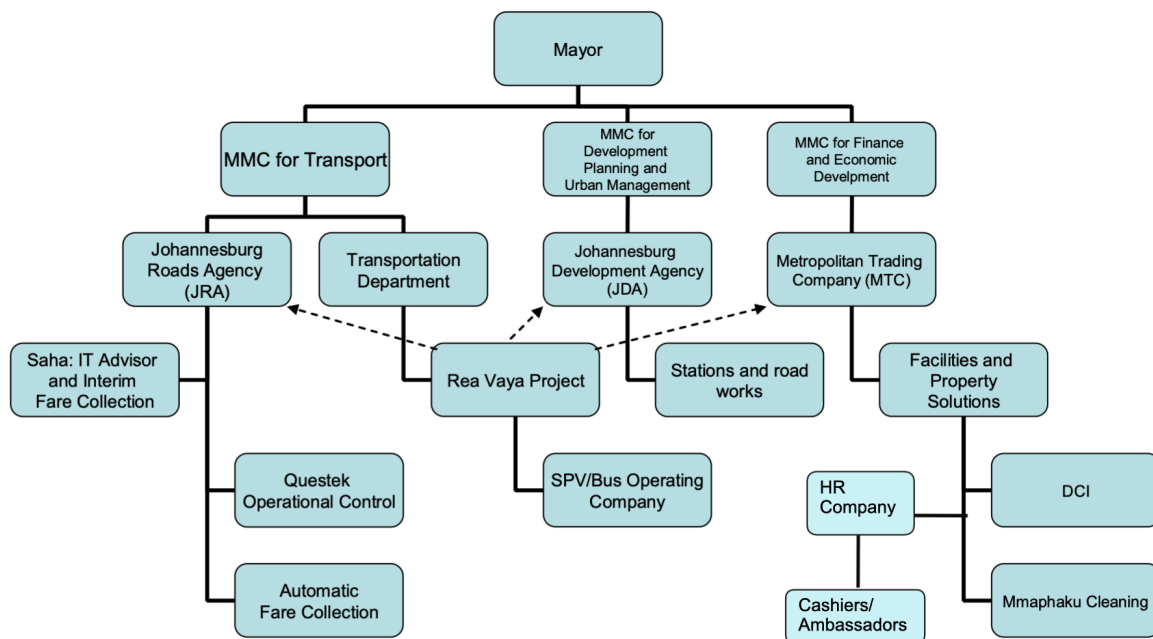
Figure 11: Overall contractual structure of Rea Vaya, 2009.[59]

Despite, or because of, this proliferation of oversight and coordinating structures, "we were really worried that, you know, it was a hell of a big project, you know, almost [...] a little bit of a vacuum from a governance point of view".[60] A major accounting firm was appointed to be a probity advisor, that is to vet major contracts against corruption. This speaks to the fractal nature of the contract state: above a certain threshold of dependence on outside contractors for the work of the state, the process becomes self-sustaining. Ever-more consultants are needed to perform the same ultimate task, as the jobs of specifying, managing, and evaluating the work of

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[58] Interview with former municipal official, 24 May 2018.

[59] Digital file, Presentation to Rea Vaya evaluation seminar, October 2009.

[60] Interview with former municipal official, 16 May 2018.

consultants require skills, or time, increasingly beyond the capacity of the state. A probity advisor is, after all, just a contractor procured to help check that the procurement of other contracts is compliant with procurement rules.

The probity advisor also came to play a role in the increasingly complex coordination of the contract.

> They used to check all of our reports that went to committees and they used to sit in on all of our management meetings, our steering committee meetings and we'd get stuff afterwards […] on questions of alignment, they were very, very, very helpful.[61]

However the governance vacuum remained. As a later review found,

> Having three [municipal entities] involved has proven impossible for the Rea Vaya project team to control, has confused lines of accountability and responsibility, and compromised the readiness of the system to open.[62]

And as one participant in a review workshop said:

> 30-50 different contracts have been concluded to date – contract management on this basis is impossible – this must be centralized.[63]

One result of this lack of control was that the Metropolitan Trading Company, whose involvement derived entirely from the thought that it could be relied upon to act with more deference to the project's goals than a private company, did nothing of the sort. It refused to sign the inter-agency agreement with the Transport Department and contracted out the job of station management, without disclosing the terms of the contract, to a company which itself simply subcontracted the work to others.

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[61] Interview with former municipal official, 18 May 2018.

[62] Digital File, "Draft Background Report for Critical Decisions Workshop Fall 2009", 13 September 2009.

[63] File 16_12, Summary report on Rea Vaya review session, October 2009.

In essence, MTC ended up functioning as a middle man, adding very limited value but significant additional cost, while the readiness of the station service contractors prior to opening was compromised.[64]

In contrast, the JDA's work on the core infrastructure of the project—stations, roadways, and depots—went relatively smoothly. The major hiccough came in the form of delayed Environmental Impact Assessment approvals from the Gauteng Provincial Government, and opposition to a key stretch of the route from affluent locals.

The Board of the Johannesburg Development Agency is particularly concerned that the infrastructure implementation is running faster than the technical planning process to properly plan and design it, and that delays in environmental approvals - especially along Oxford Road will mean that the Oxford Road section will almost certainly not be ready by May 2009.[65]

This early and rapidly growing discrepancy in implementation progress reflects, first, the focus of the project team on delivery of infrastructure, which they misjudged to be the major challenge of BRT implementation. Second, the accumulated capacity in the South African state, both embodied in the relatively young JDA and in a relatively old national history of infrastructure engineering. Third, the fundamentally technical and financial challenge of building roadways and stations, compared to the institutional-political complexities that would arise around almost all operational questions. And fourth, the enormous resources available for capital projects associated with the 2010 soccer World Cup. The association with the World Cup would somewhat taint the infrastructure programme by way of allegations that the JDA billed other World Cup-associated expenses to the Rea Va.[66]

The JRA's involvement is a key case study of those institutional-political complexities and will be discussed in the next section, as was the establishment of the bus operating companies and the negotiations thereon, discussed in the next chapters. The section to come takes the form of a

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[64] Digital File, "Draft Background Report for Critical Decisions Workshop Fall 2009", 13 September 2009.

[65] File 02_04, "Report On Proposed Amendments to Phase 1A of the Rea Vaya Bus Rapid Transit (BRT) System", 7 August 2008.

[66] Digital File, "Draft Background Report for Critical Decisions Workshop Fall 2009", 13 September 2009.

close study of a single workstream in Rea Vaya—the fare, ticketing, and electronic management systems—and its implementation problems.

3.4. Implementation problems: no ticket to ride

It is a trivial fact of project management that things frequently do not go quite as planned. Indeed, by some counts only 10% of infrastructure megaprojects come in on budget, much less meeting the "iron triangle" of on time, on budget, and delivering benefits as planned (Flyvbjerg, 2016, 2014, see also 2005; Flyvbjerg et al., 2003). When following the minutiae of a complex project over the course of its implementation, it is not even always clear which decisions constitute a deviation from the plan sufficient to hold against the project, or which show flexibility and resourcefulness in the face of challenges. The broader difficulties of considering project "success" and "failure", will be discussed in Chapter 7. For now, however, rather than an exhaustive accounting of problems (at the time or in hindsight), this section will examine a primary component of Rea Vaya's implementation—the Intelligent Transport System—that posed major implementation challenges at the time, demanded significant deviation from the process as planned, and produced incontrovertibly adverse effects that in some ways persist. This specific set of challenges also illustrates the fact that Rea Vaya did not (only) make *technical* errors in implementation, but rather that they are clearly emergent from and exacerbated by the institutional structure of the City, that is to say by the outcome of the processes of statecraft described in the previous chapter.

Implementation of the Intelligent Transport System (ITS) had been subcontracted to the Johannesburg Roads Agency as compensation for having lost the infrastructure contract to the JDA.[67] The ITS was divided into one overarching contract for an Automatic Fare Collection (AFC) system—a smartcard-based electronic ticketing system—and another for the Advanced Public Transport Management System (APTMS). This division was justified on the grounds of focus: the APTMS provider was to focus on monitoring and coordinating operations, while the AFC provider was to focus on processing tickets and regulating access to the system. The APTMS included, and is sometimes conflated with, the "operations and control centre" from which the

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[67] Interview with former JDA official, 16 May 2018.

operations of Rea Vaya would be overseen and managed. However the full system was also to include onboard technology to track and monitor buses (Fleet Management System); digital information systems for users (Variable Message Signs); devices to prioritise BRT at traffic lights in real-time (Transit Signal Priority); security technology such as closed-circuit cameras (CCTV); and a telecommunications network to link all these together. See Figure 12 below for a schematic diagram of the APTMS system.
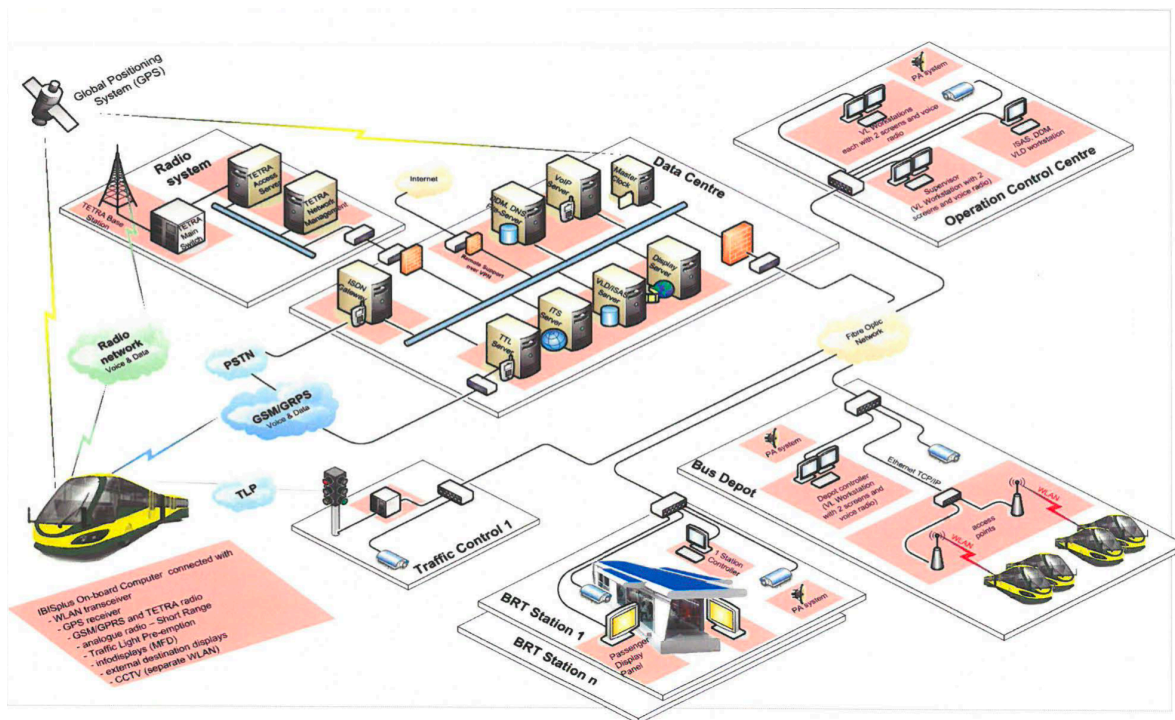
Figure 12: Schematic diagram of APTMS, 2008.[68]

Both the AFC and the APTMS were key components of BRT operations. Of them, however, the core of the APTMS was mission critical. A key aspect of global BRT best practice is gross-cost contracting, which entails paying the bus operator strictly on the basis of bus-kilometres operated within service standards. This contract type is intended to provide as clear an incentive as possible for offering a regular, scheduled service. That requires constant, accurate measurement of how many kilometres the buses are running and whether they are making their scheduled

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[68] Digital file, "JRA/BRT ITS Progress Report", 6 October 2008.

stops. Without such measurement there is no basis for performance managing the bus operating contract. Other components of the APTMS were important if less indispensable to the smooth operation of BRT. For example, Transit Signal Priority systems improve bus running speeds, so important to the central theory of BRT's low operating costs; digital signage for passengers improves service quality and predictability; and so on. An AFC system, while frequently treated as essential for a modern public transport system, is similarly just an upgrade. Paper tickets (as we shall see) are perfectly functional for the core problem of controlling access to buses, but "smart ticketing", as the employment of electronic fare media is sometimes called, makes it much easier to implement distance-, time-, passenger- and otherwise differentiated fares.

The Johannesburg Roads Agency was assigned the role of procuring and managing these contracts. It conspicuously failed to sign the inter-agency agreement with the City's Transport Department—a failure that, over time and in the face of the project team's insistence, is hard to distinguish from refusal. It then went to market with tender documents and draft contracts not seen by the Rea Vaya team. At the time, it was embarking on a substantial upgrade to the City's traffic management and signalling system coordinated by a software contractor called Delcan.[69] The JRA undertook—it is unclear with how much discussion with the Rea Vaya team—to combine elements of the ITS with this upgrade, under the coordination of their existing software provider.[70]

The APTMS contract was awarded in April 2009 to South Africa-based Questek Transit Technologies (Pty) Ltd, without the Rea Vaya team seeing or signing off on the tender or contract. The JRA included in the tender an operational control room for traffic management throughout the city, on top of the needs of Rea Vaya, in the JRA building—contrary to the (unsigned) agreement with Rea Vaya.[71] There was no additional budget for this substantial added capability: "as a

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[69] This was in addition to the Rea Vaya team's international AFC consultant, local ITS and AFC consultants, and the JRA's own local APTMS and AFC consulting teams. The National Department of Transport had its own AFC consultants.

[70] File 24_07, Project team correspondence, 18 October 2008.

[71] File 24_33, Annexure A to Memorandum of Agreement between JRA and City of Johannesburg (unsigned), January 2008.

result, more than the entire IT budget was spent by the JRA yet only part of the required Rea Vaya IT infrastructure has been put in place".[72]

The JRA initially tried to award the AFC contract to Questek, which promised a 20% discount if it won both tenders. This fell foul of the city's procurement rules and the contract was re-tendered. After a company called TMT was selected, approval of the contract was drawn out for months until being eventually signed off in September 2009. This faced a court challenge by Questek which made an urgent application in January 2010 to prevent the contract being signed, and for the re-evaluation of the tender with the winning bidder disqualified for non-compliance. Meanwhile, the Rea Vaya team launched a mediation process against JRA to have the contracts ceded back to the City; only by late 2011 would it report that most of the contracts had been ceded.[73]

> In the case of the JRA subcontract, the JRA leadership never kept the Rea Vaya project leadership informed about what expenditures it was making on the project's behalf, never showed tender materials to the Rea Vaya team prior to their release, never structured their invoicing in a manner compatible with the needs of the Rea Vaya team to track expenditures against the overall project budget, and most importantly did not conform to a timeline set by the Rea Vaya team. The probity advisors to the project sent request after request to the JRA asking to be shown the tendering documents and any contracts signed, and for many months was blocked by the head of the JRA and the JRA staff who said that they could not release the documents on conditions of commercial confidentiality. Irregularities were found in the letting of the AFC contract, and the contract has still not been signed. The Rea Vaya project team have initiated inter-agency proceedings against the JRA to try to retake control of the AFC contract.[74]

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[72] Digital File, "Draft Background Report for Critical Decisions Workshop Fall 2009", 13 September 2009.

[73] Digital file, Correspondence between Rea Vaya team members, 10 September 2009; Digital file, "Overview of Phase 1A and Phase 1 costs and projected budget requirements" [Presentation], 1 September 2011.

[74] Digital File, "Draft Background Report for Critical Decisions Workshop Fall 2009", 13 September 2009.

As an added complexity, while interoperability between the AFC and APTMS systems was essential, and required by contract, no actual facility was established to enable or force the systems to be built to speak to one another. As the losing bidder on the AFC system had won on the APTMS system, and subsequently engaged in litigation against both the City and the winning bidder over the AFC tender, cooperation between the two was impossible:

> The main practical problem is that the… award to TMT *inter alia* included a condition that TMT concludes an agreement with Questek in terms of which the integration between the APTM and AFC systems is arranged. Although Questek cannot lawfully rely on a self-created impossibility, the conclusion of such contract with TMT in its capacity as the City's AFCS contractor would amount to a fatal admission in its pending case against the City and TMT, as a result of which prior compliance by TMT with the above-mentioned condition would indefinitely delay the conclusion of its contract with the City. […] the above-mentioned condition could be replaced by alternative arrangements with TMT to ensure integration of the AMTM and AFC systems, in which respect negotiations between the various parties are currently being finalised.[75]

While this was unfolding there was another conflict underway over the AFC system. The National Department of Transport had been integral to the original propagation of the BRT concept amongst cities, and was responsible—and enthusiastic—for the policymaking and funding for BRTs. This is described more fully in Chapter 6. As the first and most ambitious of the BRTs—the first among equals so to speak—Rea Vaya was a particular interest of the Department. As such it played a major design role in Rea Vaya, treating it as a pilot from which to standardise BRTs across the country. One area of particular attention was the specification of buses to be used; another was the ticketing system.

Existing smartcard-based ticketing systems around the world were predominantly based on a "closed loop": a proprietary card that stored a record of the fare, which could be read by a dedicated reader at the turnstile. This is the technology behind the Oyster Card. As Rea Vaya was planning its AFC, an "open-loop" technology was emerging. This would allow any appropriate

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[75] Digital file, "Progress Report on Conclusion of Automated Fare Collection Contract with TMT", April 2010.

card, from any provider, to store the fare. These are called EMV cards, after the Europay-Mastercard-Visa chip-and-pin standard on which they are based; one of the key points of an EMV ticketing system is to allow chip-and-pin bank cards to be used as fare media. The other key point is that, as an open system, the same card—whether bank card or transit fare card—could be used to pay for any compatible public transport fare, or indeed to pay for anything else. It is for this latter reason that the NDoT insisted, starting in 2008, that Rea Vaya pioneer the use of EMV cards, as a basis for a nationally-interoperable public transport ticketing system.

> If we add the above factors with the fact that EMV compatible contactless payments are finally maturing and converging on a common standard/entry point - as well as the fact that this enables off-line transactions, as well as the fact that this enables pre-paid stored value cards as well - then *we are seeing a unique convergence that could enable us to leapfrog the closed-loop, proprietary ticketing stage* and move to an open payments system platform using pre-paid stored value and pre-authorised debit and credit......[76] (emphasis added)

This official's ideas reflect the influence of contemporaneous debates about the possibility of developing countries, especially in Africa, "leapfrogging" to globally cutting-edge technologies. (Alzouma, 2005; see e.g. Davison et al., 2000; de Beer, 2004; Fuchs and Horak, 2008, 2007; Murphy, 2001). However the international consultant's reply took the other side of the debate.

> My only point is please double check that point because the BRT experience says that fare collection is the most complicate issue. More than the infrastructure, the procurement of buses and the inclusion of the current taxi industry.

> I agree that the future could be closer to the Bank Industry Card Technology. But like the first big challenge out of that normal industry will be the BRTs, it is important don't taking many risks at the same time that limit that expansion of that technology, if they fail in the first steps of the BRTs. My concern is if it isn't so big risk putting the operation of the BRTs in the hands of only one technology, never proved before in mass transit operation. *You could sacrifice the present for*

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[76] Digital file, Correspondence between officials and consultants, 16 July 2008.

the future… but if you don't have present, you won't have future.[77] (sic, emphasis added)

Open-loop EMV systems are substantially more technically and institutionally complex: instead of requiring simple local storage of fare products or value, they are effectively (and sometimes literally) bank cards: the value on the card is simply a local record of what is in a bank account elsewhere. EMV cards therefore require the same frequent communication between the "merchant" (the Rea Vaya turnstile), the merchant's bank, and the bank that issued the card. See the schematic comparison between closed- and open-loop systems in Figure 13. In addition, as financial products which could in principle come to be used at any point of sale, EMV cards fell under South Africa's financial surveillance regulations requiring registration of any new financial product against a name, ID or passport number, and address, and proof thereof. This was eventually partially waived by the relevant financial regulator, although EMV cards still had to be registered against a name and ID.[78] Only two banks in the country had begun to introduce chip-and-pin EMVs for their own credit and bank cards, and no major public transport provider in the world had yet deployed the technology; in fact in 2009 the necessary technology had not even yet been adopted as part of the EMV standard (Joubert, 2010; Meyer, 2007).
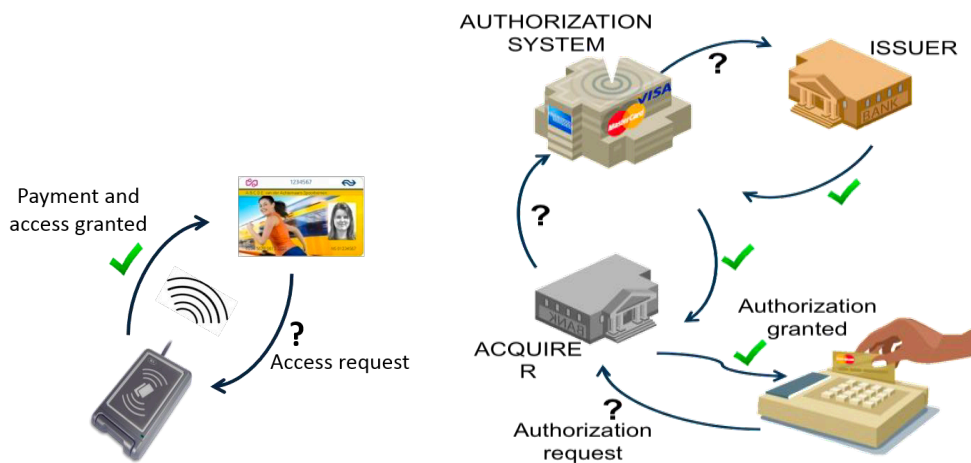
Figure 13: Offline closed-loop (left) vs open-loop (right) electronic fare payment.[79]

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[77] Digital file, Correspondence between officials and consultants, 17 July 2008.

[78] Digital file, "Probity Advisory: AFC – Impact of EMV readiness on tender award", 14 December 2009.

[79] Digital File, World Bank, "Rea Vaya Fare Collection: An Assessment of System Design, Implementation, and Operation", 9 March 2015: figs. 1 and 2.

By the time the AFC tender was issued in late 2008, the Department and the Rea Vaya team had agreed in principle to aim for an EMV-based system. However, the JRA-issued tender, again not reviewed by Rea Vaya or the National Department, failed to satisfy the Department:

> It seems the final tender document did not fully incorporate the overall spirit of the agreement that [our respective representatives] had hatched after several days of detailed negotiations.
>
> The tender is therefore overly prescriptive about the actual technology that must be supplied for the single application Rea Vaya card instead of leaving it open for a possible EMV consortium to offer a fully integrated package for the high end EMV interoperable card and for the single service card.
>
> In response to questions - the JRA did concede that alternative solutions to their prescription for the single service cards could be considered […]
>
> Whenever someone is overly prescriptive in a tender and is also slightly schizophrenic in calling for EMV compatibility on the one hand and the ruling out full reload EMV integration options – means either that they are subverting the spirit of the Regs and setting up the compliant responses for failure…or less sinisterly, they are simply careless and slightly clueless about tapping the market and allowing it to innovate as much as possible.[80] (sic)

When the AFC contract was signed in September 2009, the National Department reacted strongly. It indicated that it regarded the JRA to be acting in bad faith, deliberately undermining forthcoming regulations on AFC systems and possibly acting under ulterior motive:

> it is crucial that JHB [Johannesburg] make the right decisions otherwise the [National Department of Transport] will have to object as the JHB BRT EFC [Electronic Fare Collection] system is vital to signal Government's seriousness in terms of the new draft EFC Regs. […]

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[80] File 24_03, correspondence between officials from National Department and City of Johannesburg, 29 January 2009.

> The JRA team's consultant's on EFC - have agendas other than 100% compliance with the DoT's Draft Regulations. This is evident from the way the RFP was specced […]
>
> I am therefore worried that JRA are not playing open cards, that there might be other JRA/consultant agendas going on and that time is rapidly running out....[81]

And:

> A lot of this mess results from the JRA and its consultants NOT taking the Draft Regulations seriously and putting in place a vaguish specification in the RFP issued last December.[82]

These claims of ulterior motives are plausible. The JRA handles many of the City's biggest capital, operations, and maintenance contracts, all of which are lucrative targets for patronage. Later reports describe how these contracts have been used to favour companies that make the correct political contributions (Phillips, 2018). The ITS contracts were just such large contracts.

However that does not detract from the National Department's intervention and intransigence. The Department even objected to the use of non-reloadable return tickets for occasional users; only single one-way tickets were allowed as an exception to the regulations. In the subsequent negotiations after the tender was awarded, conducted in great haste, the contract was brought into alignment with the Department's EMV plans. However in exchange for the increased technical burden of EMV, service standards were relaxed in other areas—particularly minimum service levels for the availability of card top-ups. As a result many fewer stations had the equipment for riders to top up their cards. Poorer riders who carefully manage their cashflow top up smaller amounts more frequently. Unable to load their cards at many stations, these riders were therefore effectively excluded from starting their journeys at most stations. This hasty compromise was, like so many, a false economy. It would come to damage ridership directly, and also contribute to undermining the system as a whole: it was one of many decisions that undercut the "hop-on/hop-off" nature of BRT, and reduced the usefulness of lavishly-built stations.

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[81] Digital file, Email from national official to municipal official, 27 August 2009.

[82] Digital file, Email from national official to municipal official, 30 November 2009.

These and the various other contractual delays set back both the AFC and APTMS systems enough that they were entirely non-functional for the launch of Rea Vaya and indeed for a long time afterwards. Already in September 2008 the JRA had announced to the City that it would be unable to deliver a functional fare system in time for the Rea Vaya's planned launch in May 2009.[83] Negotiations ensued and a hasty interim solution was found, with the JRA contracting their advisory AFC consultant to provide a paper-based ticketing system.

When the systems were eventually introduced, the results were disastrous. When the AFC system was introduced on 1 July 2013, problems with the design and implementation were sufficient to immediately devastate fare revenue from a combination of deterred passengers and passengers who switched from riding with a paper ticket to riding without any ticket at all.

> the Smart card had a few... I don't know, they were just like hard deal breakers for commuters that turned out... *(laughs)*. I think the city stumbled into that a little bit, but part of it was just the technology of using a card and having to update it, but then also having to maintain a minimum balance and initially a loading charge – not realising that people load those cards regularly and if they have to pay a charge every time, it's actually quite... so it's a deal breaker. So it fell through. BRT lost—what was that? It was something like... it was something ridiculous—it was like 60% of the ridership from one month to the next, and only 30% then came back over the next 4 or 5 months. So it was a complete step change in ridership.[84]

A 2015 World Bank review, conducted at the request of the City, found a series of mutually-compounding conceptual, technical, contracting, labour, oversight, and administration issues. Among its findings was that

> The extent of the fare evasion is unknown and no proper studies have been done to understand its magnitude, but on one occasion a Rea Vaya exercise using visual counts identified what appeared to be a fare evasion of 80% on a single route (F11 route); anecdotal evidence from the staff tends to confirm that payment evasion is quite prevalent. [...]

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[83] Digital file, Letter from Rea Vaya to JRA, 6 October 2008.

[84] Interview with former national official, 4 May 2018.

In hindsight it is clear that to implement a complex solution such as EMV, which is not only technically sophisticated requiring complex trade-offs between cost, effectiveness and user experience; but also requires complex contractual relationships and negotiations, significant more guidance, capacity building and hand-holding was probably required from the national government.[85]

As for the APTMS, it was effectively non-functional. Five years later a national official wrote:

Do you know one of their bus stops's GPS codes coordinates is in Libya due to shoddy quality control and inability to get southern hemisphere latitudes entered correctly. Why was this not fixed in an hour?[86]

In short, the Rea Vaya was left with a ticketing system that did not control access to the buses and provided minimal, unreliable, information about actual ridership; and a fleet management system that provided no information about the location or service of the buses. The former left the City with minimal revenue or other indicators of success; the latter meant it could not enforce or even monitor service standards on the gross-cost bus contracts that committed it (by careful design) to pay for each kilometre driven. It could not, so it did not.

The bus operator is paid out each month the maximum amount of operational service fee. irrespective if their service is according to their original service level agreement. Thus service level agreements are not monitored yet payments are done to the operator as if they have attained the highest level of service required;

The City appears to be running buses and operations on the fly without any automated adherence measurements and subsequent service level agreement monitoring. One may as well have a marshall standing at the start of each route with a stopwatch and flagging buses to pull away every 20 minutes instead of a multi-million rand technology – the effect would be the same and the costs would be much lower.[87]

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[85] Digital File, World Bank, "Rea Vaya Fare Collection: An Assessment of System Design, Implementation, and Operation", 9 March 2015.

[86] Digital file, Correspondence between national official and consultant, 28 October 2014.

[87] File 10_08, Draft technical audit of Rea Vaya, 2014-15.

As noted, this did not come with commensurate savings on the ITS systems. A 2014/15 technical audit of the ITS systems could not secure accounting of the ITS contracts from the City, including subsequent interim contracts; but estimated the total cost at around R1bn, compared to an original capital budget of R3bn for the full, as yet unbuilt Phase 1 of Rea Vaya. Around that same time the World Bank found that the ITS system cost the system R9m per month for maintenance, or about R10 per passenger, where the average fare was R8,50.[88]

> Evidently, a demand that is lower than expected plays a significant role in this equation, but so do the illegal ticket sales and fare evasion, the procurement of non-essential ITS components, and very expensive contracts for maintenance that do not seem to follow international benchmarks.[89]

This has been a deep dive into a single set of contracts whose implementation left much to be desired. However, this cannot be simply chalked up to technical errors (although there were those). The multiple and compounding problems with Rea Vaya's ITS were a direct result of a particular state configuration. The previous chapter described how the City of Johannesburg's corporate structure came to be, resulting from a confluence of politics, ideology, economic crisis, and prevailing international winds. This structure resulted in the City being reduced to a rump political and policymaking body, with all frontline activities spun out into city-owned companies. These companies operate at arm's length by design and law, giving the City only attenuated control over their activities—through their independent boards as sole shareholders, and through Service Level Agreements which—obviously—are agreements, not dictates.

It was not necessary that Rea Vaya should be delivered by a consortium of these companies. Among many possible alternatives, the most obvious would have been for a new company to be started for the purpose, housing all of the various workstreams. But instead Rea Vaya was the first major test of the City's new structure. As a result the City team had the power to assign tasks and associated resources—subject to negotiation—but only the weakest of abilities to coordinate, control quality, or enforce the minimum of adherence to the project's needs.

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[88] Digital File, World Bank, "Rea Vaya Fare Collection: An Assessment of System Design, Implementation, and Operation", 9 March 2015.

[89] Digital File, World Bank, "Rea Vaya Fare Collection: An Assessment of System Design, Implementation, and Operation", 9 March 2015.

Ultimately this hobbled the operation of Rea Vaya for years, caused costs to metastasise, and dramatically reduced revenues.

This malign confluence of the New Public Management, the contract state, and municipal corporatisation will make another appearance in the analysis of Chapter 7. For now, however, we can note that the project that was intended to consolidate the statecraft that produced the City of Johannesburg in fact pushed it to and beyond breaking point.

3.5. Conclusion

This chapter introduced Rea Vaya and began to build the empirical base of the analysis to come. This includes evidence that is absent from both the academic literature and the popular conversation about Rea Vaya. The chapter began by tracing the origins of Rea Vaya as an international concept, overlaid somewhat uneasily over a local project-in-progress. It then went on to show how South Africa's "contract state" (Brunette et al., 2014) shaped the Rea Vaya project, both by providing fertile ground for the international consultants who spearheaded it and by spreading the implementation across a number of poorly-integrated and -coordinated state institutions. Finally, it showed how the processes of statebuilding described in the previous chapter, producing the contemporary City of Johannesburg, resulted in an institutional configuration entirely unsuited to the delivery of a large, complex infrastructure project—an infrastructure project billed as central to the future of Johannesburg.

The next two chapters continue the story of Rea Vaya, focusing on another area where implementation proved to be a major challenge, and the state inadequate to the task: negotiating the establishment of Bus Operating Companies with the truculent, intransigent, and downright chaotic incumbent transport operators of Johannesburg: the minibus taxi industry and PUTCO.

4. Minibus taxis, incumbency, and the national nemesis

> It is a poor-spirited concern that does not constantly aim to create for itself such a position of advantage as will give it something of a vested interest in the traffic. (Veblen, 1919)

> The way Taxi associations run their networking is nothing more than feudalism and this should be discouraged. It does not allow the development of the delivery of capitalism.[90]

4.1. Introduction

The previous chapter studied the introduction of BRT to Johannesburg and the institutional issues around its technical planning and implementation. It then took a close look at one aspect of Rea Vaya's implementation where those institutional issues—resulting from the statecraft that produced the City of Johannesburg—produced extremely poor outcomes. There was another aspect of implementation that posed a significant problem at the time, and continues to dog Rea Vaya. This would be, as Dewey (2016) puts it, the "negotiated re-regulation" of the incumbent road transport operators and their formation into Bus Operating Companies (BOCs) for Rea Vaya. In what would become Rea Vaya Phase 1A, the minibus taxis were the major counterparty to negotiation and will be the focus of this chapter. The next chapter will pick up with Phase 1B, where the Putco bus company's involvement introduced an additional layer of complexity—and additional matters of statecraft.

Until now, we have considered statecraft mostly as concerns only the internal relations of the state simpliciter. The previous chapter, in considering the complex contracting arrangements between City institutions and their many service providers, showed that the concept can be extended outwards. Especially but not only when we are talking about something like a state form—the contract state—the question of the state's interface with other social and economic institutions is also something that is crafted through institutional-political contestation, and has

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[90] Digital File, Interview with provincial official for National Department of Transport Policy Review, 2007.

its own effects on institutional configurations within and without the state. Harber and Cirolia (2021) in introducing the concept of urban statecraft name as one of their three sites of statecraft the regulation of popular transit, also called informal transport or paratransit. They note that different de jure and de facto regulatory regimes create different relationships of enforcement and patronage between agents of the state and transport operators. Patterns of behaviour of state actors, and channels of power available to them, are themselves matters of statecraft.

This can be taken further, with Block's (2003) reading of Polanyi (1944) on the "always embedded economy": the state and the "market", and indeed broader society, are mutually constitutive and their methodological division is artificial and untenable (Lie, 1997, see also 1992). Indeed it also recalls the regulation school, for whom the institutions of state and those in the market are simply various components of the mode of social regulation that—partially and for a time—smooths the contradictions of capital (Boyer, 2010; Peck and Tickell, 1992). As such we can see urban statecraft as the crafting not only of the institutions of state, but the entire assemblage of social, economic, and political institutions that collectively govern the city. Specifically, here, we can see in the history of the minibus taxi industry multiple projects of statecraft, by different actors, working to build different public/private interfaces for urban transport.

Incumbency

This and the next chapter will look at the involvement of the minibus taxi industry and Putco in Rea Vaya as a question of incumbency. Incumbency is one of the central questions of development theory: development inherently, if not strictly necessarily, entails disruption to the status quo, and thus poses a threat to those whom the status quo most directly benefits. This is most often observed with respect to economic or industrial development, especially in transitions from predominantly agrarian to predominantly industrial economies, with the shifting class dominances thus implied. This is described by Veblen (1919) as "vested interests" holding back industry from maximum efficiency in the name of profit; and in Olson (1982, 1965) as a theory of interest groups demanding distributional economic policy. As Acemoglu and Robinson write:

> changes in institutions or the introduction of new technologies often create
> turbulence, eroding the political advantages and future economic rents of
> incumbent elites. Alternatively, new technologies may enrich competing groups,

increasing their threat to incumbents. These considerations make politically powerful groups fear losing power and oppose economic and political change, even when such change will benefit society as a whole. (Acemoglu and Robinson, 2006, p. 115)

Acemoglu and Robinson's account is clear that the prospective loss of "political advantages and future economic rents" leads to resistance to change that reduces their power: profits are downstream of power. Power viz. political control can reliably be used to restore profits, so is (to them) the first concern of incumbent elites. Another definition of vested interests, of particular relevance to this chapter, is when "residual claimants of the currently operated technology try to block the emergence of superior technologies by using the political process" (Krusell and Rios-Rull, 1996, p. 301).

It should therefore not surprise us that transport is a site of vigorous defence of incumbency. It is not only, when provided privately, a profitable business with a typically captive market, but also per Vigneswaran and Quirk (2015) constitutive of state power. Control over the movement of people and goods—and provision is a powerful form of control—therefore commands both profits *and* power. The stakes for incumbents are accordingly high.

The strategies that incumbents use to defend their position are varied. Literature from the field of historical institutionalism has engaged with these strategies, and the structural features of those positions that give them the power to do so (see for example Fligstein, 1997; Lawrence and Suddaby, 2006). Key among these are the ability to control timing, agenda-setting, undertake minimal "gestural" reforms, and deploy processes and technical rules to foil challenges (Capoccia, 2016). These strategies will all feature in the chapter to come. Building on this institutional literature, a growing field of research on sustainability transitions has placed fossil fuel incumbents at the centre of resistance to changes in energy systems, which include the energy systems embodied in transport (see e.g. Morgan, 2019; Newell and Johnstone, 2018).

The state is increasingly recognised and understood as a key site in and through which incumbents defend their positions (Kuzemko et al., 2016; Lauber and Jacobsson, 2015; Lockwood et al., 2017; Stirling, 2014). For example, the state features extensively in Baker et al.'s (2014) account of why the so-called Minerals-Energy Complex (MEC) has proved so persistent in South Africa. Indeed the very concept of the MEC is an account of the statecraft that built and consolidated the mining and chemical industries' dominant incumbency in the South African political

economy (Fine, 2008; Rustomjee and Fine, 1997). More recently and pertinently, Bradlow (2021) has written about incumbency in terms of "weapons of the strong" that wealthy white constituencies have wielded to shape infrastructure planning, development permissions, and institutional forms in post-apartheid Johannesburg.

This chapter details the negotiations for Rea Vaya Phase 1A, which focused on the minibus taxi industry. It first covers the background to the negotiations with the minibus taxi industry and the City's broader relationship with the sector. It will then show how the bus operations of Rea Vaya were planned, and finally how the negotiations with the minibus taxi industry unfolded. Overall, it will argue that, whereas incorporation of popular transport operators into BRT is usually treated as a question of "formalisation" (see e.g. Gauthier and Weinstock, 2010; Venter, 2013) and therefore the operators as prospective *beneficiaries* of development, this is a red herring. Rather, incumbent operators should be seen as an incumbent vested interest, and therefore steadfast *opponents* to development.

4.2. The players in the game

In negotiations over the BRT's operating model, representatives of the taxi industry would insist that "government [not] be seen to be both referee and player."[91] In 2006, there were three major players in Johannesburg's road-based transport game: Metrobus, Putco, and the minibus taxis. These together, aside from two rail-based operators, represented the field of incumbents in the industry that the City of Johannesburg, and soon the National Government, aspired to "develop".

The first road-based incumbent was Metrobus. Properly called Johannesburg Metropolitan Bus Services (Pty) Ltd., Metrobus was established in 2000 along with the City of Johannesburg, as an independent but City-owned company to operate conventional bus services previously run by the City's white predecessor municipalities. Servicing the white minority in Johannesburg, these routes covered only the core of the new Johannesburg, excluding those people whose needs were poorly served by, primarily, Putco. As a fully City-owned company, it did not hold the same interests in opposition to Rea Vaya as the other incumbents: indeed it was intended to support

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[91] File 39_24, "Report on meetings with operators", 24 June 2008.

them in running Bus Operating Companies, and eventually to be combined with the Rea Vaya into a single system. Neither of these would come to pass: the first for reasons discussed below; the second because of some of the pragmatic sacrifices studied in Chapter 7.
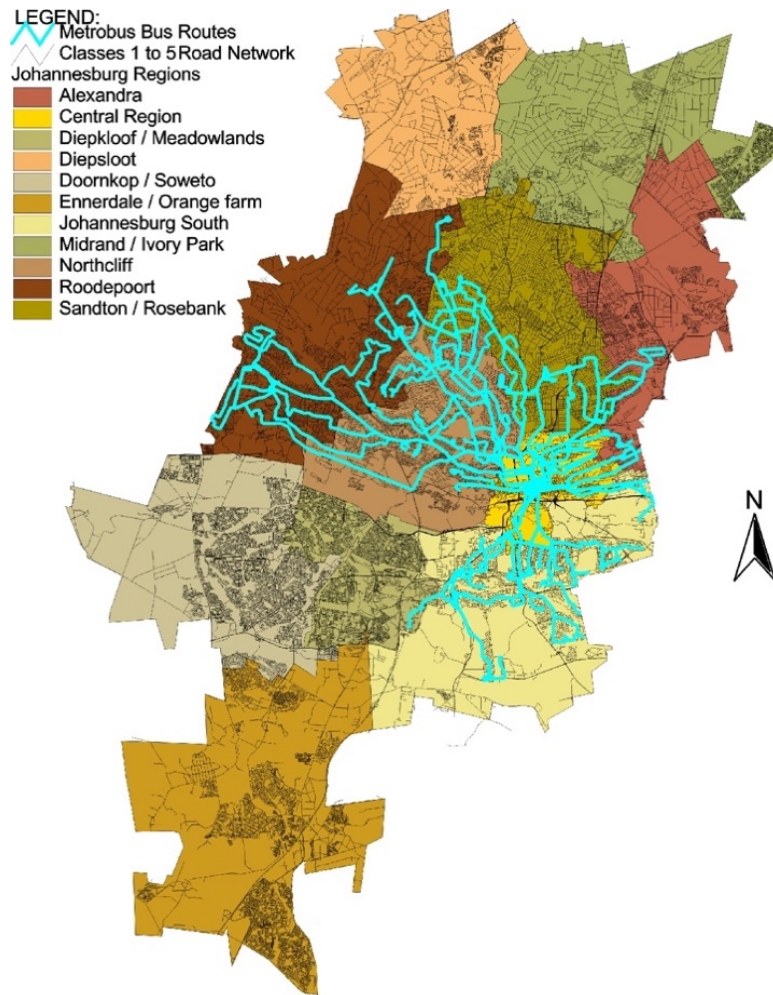
Figure 14: Metrobus route network in 2003 (City of Johannesburg, 2003a)

The second incumbent was Putco (Pty) Ltd, a private bus operator that had enjoyed a licensed, open-ended monopoly since 1945 over most conventional bus operations in and around Gauteng. Its routes serviced the black African, Coloured, and Indian areas incorporated into the new Johannesburg. As this chapter will show, its involvement in Phase 1A was curtailed, with fateful consequences. These consequences and its involvement will be discussed in the next chapter, on Phase 1B.

The minibus taxi industry and the making of an incumbent

The third major road-based incumbent at the time of Rea Vaya's planning was the minibus taxi industry. The modern taxi industry arose after the 1970s as a deliberate result of transport deregulation which intended to reduce the transport subsidy burden on the state while absorbing rising unemployment, privatizing public services, and depoliticising transport which had been the site of repeated boycotts (Dugard, 2001; Lewis, 1991; Marais, 2010; Todes, 2015). The physical form of the taxi derived from a loophole in the 1977 Road Transportation Act, which allowed a vehicle carrying up to eight, later fifteen passengers to avoid full regulation as a bus (Woolf and Joubert, 2013).[92] Further deregulation followed in the 1980s, over the resistance of the existing, incumbent, operators: "deregulation, according to [the South African Black Taxi Association], flooded the market with pirate taxis and newcomers and aimed at fragmenting the taxi industry" (Woolf and Joubert, 2013, p. 286). This deregulation was part of a more general retrenchment of the state and substitution with private services, for fiscal and ideological reasons, but was also motivated by a sort of racial neoliberalism: an "attempt to 'introduce' the market to an enclave of black South Africans who, for the most part, had no experience of capital accumulation" (Dugard, 2001, p. np; see also Lewis, 1991; Marais, 2010; Todes, 2015). If the integral state encompasses state, market, and social institutions, then this was statecraft acting on all three: dismantling this function of the public sector, and rebuilding it in the private sector governed (as we shall see) by sui generis social institutions.

Regardless of the intent, violence resulted directly. Deregulation led to a flood of new taxis, fragmentation of the market, and intensified competition. The number of minibus taxis increased from 3 700 in 1985/86, to 40 000 in 1987/88, to 140 000 in 2001, a number which stayed reasonably flat until at least 2013 (Dugard, 2001; Joubert, 2013 citing McCaul 1990). In 2003, the first National Household Travel Survey, data from which would have been used by Rea Vaya's planners, found that taxis serviced 31% of trips to work in Gauteng compared to 6% for conventional buses (Wray and Gotz, 2014; from National Department of Transport, 2007). Figure 15 below shows the full modal breakdown from that survey. Deregulation over the industry's objections created deep patterns of mistrust between the state and the minibus taxi

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[92] Eventually 35 under the Taxi Recapitalisation Programme, which did however include additional regulation for these new "midibuses".

industry, and led directly to internecine violence as a mechanism of industry self-regulation (Dugard, 2001; Woolf and Joubert, 2013). This violence was largely ignored by the apartheid state, confined as it was within the black African population. These two acts of deregulation leading to informal arrangements—first the quasi-legal taxi industry, then its turn to violent self-regulation—are illustrative of how informality doesn't exist only around the edges of formality, but emerges in the wake of its retrenchment (Lindell, 2010a).
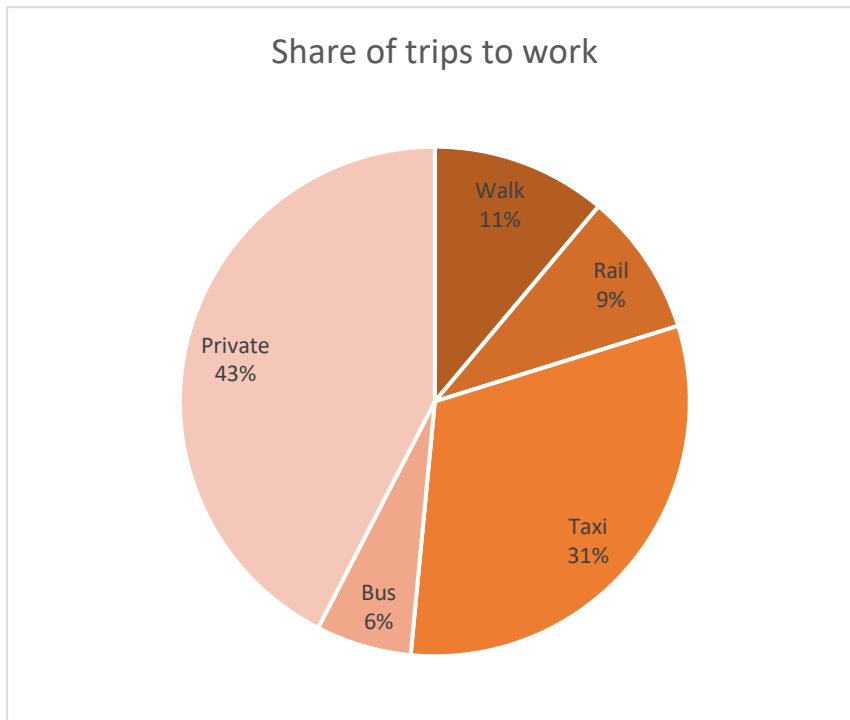
Figure 15: Modal share of trips to work in Gauteng, 2003. Data from National Department of Transport (2007) presented in Wray and Götz (2014)

The 1977 reforms had established a two-track regime of regulation. Competition between conventional bus operators, whether privately or publicly operated, was carefully managed through restricted permits and interim and later (abortively) competitive contracting; whereas minibus taxis were allowed by the state to compete "at will" (Khosa, 1995, p. 173 citing McCaul 1990). Although taxis nominally still required permits, they were issued "like confetti" and enforcement was largely abandoned; a situation which persisted until at least 2001 and for the most part until today (Dugard, 2001). This system of war of all against all did not last long before leviathans emerged: the South African Black Taxi Association (SABTA), representing the pre-deregulation incumbents, successfully lobbied the national government to be accepted as the recognised voice of the industry, and mounted stiff opposition to new permits: a "lordly gate

keeper" (Khosa, 1995). Here again we see an incumbent manoeuvring by means of the state. Meanwhile, groups of operators formed local taxi associations to regulate competition, especially fare prices; these quickly added protection to their list of regulatory functions, using "their organisational strength to extract income, commonly through the use of violence" (Dugard, 2001, p. np). The urban state, of which transport is an integral function, was thus rebuilt to involve new regulatory institutions operating outside of the government and the law.

The associations were and remain the major regulatory force over the taxi industry. Indeed, the state partially outsourced what regulatory power it had to the associations. New permits are typically granted to associations already active on that route, for distribution among their members. Some associations refuse entry to new members, or allow entry only for a sometimes significant fee; some limit the number of taxis members can own. The taxi associations use both the legal system and direct violence to enforce their regulatory power, including claimed property rights over the routes that they control (Kerr, 2018). In this way the taxi associations hold a shifting, ambiguous, and ambivalent relationship with the institutions of state, variously competing against, undermining, bypassing, and exercising power on behalf of it (contra Helmke and Levitsky, 2004).

The tensions and violence within the taxi industry are and have always been linked to matters of (formal) politics. By some accounts, the deregulation of 1987-8 was intended to destabilise the black African community and increase chaos and violence in the run-up to negotiations with the ANC. Some of the early violence in now-KwaZulu Natal was between taxi associations supposedly associated with the Inkatha Freedom Party, a Zulu nationalist party that acted as an ally (or proxy) of the governing National Party; and those supposedly loyal to the ANC. "Indeed, the political form of late-apartheid taxi wars was so pronounced that taxi violence, like train violence, was seen as an integral component of political violence" (Dugard, 2001, n.p.) and it was only later that monitoring agencies began tracking them as separate categories.

The "taxi wars" peaked in 1993, at least in terms of deaths and injuries. Their increase tracks with the rise in political violence before the first democratic elections in 1994, attesting to the political nature at least in part of taxi violence. After a drop in 1994 deaths and injuries continued to rise at least until the end of the decade–while political violence kept dropping: see the figures in Table 7. Dugard (2001) attributes this to the increasingly "informal, decentralised, and complex" nature of taxi violence, and its de-linking from formal politics. After this period,

the associations increasingly came to resemble organised crime syndicates actively extracting surplus from the sector, only partially behind the fig-leaf of "protection". Attempts to re-regulate the industry in 1998, involving a moratorium on new permits, registration of which taxis were operating which routes, and "special legalisation" of operators who didn't have permits, produced a new wave of violence in 1998 (Dugard, 2001).

Table 7: Deaths and injuries caused by taxi violence, 1991-1999 (Dugard, 2001 using data from the South African Institute of Race Relations and the South African Police Service).

	Number of deaths	Ratio of deaths 1994=100	Number of injuries	Ratio of injuries 1994=100
1991	123	67	156	53
1992	184	101	293	100
1993	330	180	526	180
1994	183	100	292	100
1995	197	108	282	97
1996	243	133	331	113
1997	243	133	331	113
1998	246	134	343	117
1999	258	141	287	98

This resistance, said the Director General of the National Department of Transport, was "the actions of vested interests threatened by moves to restore order ... efforts by Mafia-type elements clinging to their positions of power as the restructuring of the industry is shaping up"; the Minister for Transport said "The upsurge in violence is caused by those who want to resist change in the industry. They are so used to making money through violence that they are opposed to the regulation and formalisation that will ensure that it is properly run." (both quoted in Dugard, 2001). It is clear that by 1998 the taxi industry was already a powerful incumbent, willing to protect its incumbency against both encroachment by new entrants, and government intervention.

After 1994, a significant focus of the immediate post-apartheid government was in consolidating a highly and often violently fragmented taxi industry into a single organised structure. It used a combination of inducements, both positive and negative, including a major capital subsidy in the form of the Taxi Recapitalisation Programme. This paid operators to scrap the oldest taxis and replace them with new, higher-capacity vehicles. This process culminated in the National Taxi Conference in 2001, at which the South African National Taxi Council (SANTACO) was established as the recognised representative body of the industry, with subsidiary provincial and local substructures (Woolf and Joubert, 2013). This consolidation is nothing less than a process of regulatory reform and statecraft; per Mitchell (2006) there is no reason to reify the nominal distinction between SANTACO and the institutions of the formal state.

However, the hegemony of SANTACO was never to be total; it represented only those taxi associations who were supportive of, and hoped to benefit from, the recapitalisation programme (Dugard, 2001). A splinter organisation, the National Taxi Association, remained in independent existence and vigorously opposed the programme. It was supported by the National Taxi Drivers' Organisation (NATDO) whose representativity was unclear (Dugard, 2001). Foreshadowing the Rea Vaya story, a smart-card ticketing pilot introduced as part of the recapitalisation programme provoked violence that killed 15 people in Shoshanguve (Dugard, 2001).

For our purposes in this chapter there are three key takeaways from this (brief) history of the taxi industry. The first is that it self-consciously organised itself as an incumbent—even if that organisation was always fragmented—and consolidated that incumbency over the course of the 1990s, and defended it vigorously through the courts and with violence. The second is that the "taxi industry" as an institutional configuration is both a major regulatory body for transport in South Africa, with certain regulatory functions explicitly outsourced by the state, and an assemblage of criminal organisations. The third takeaway is that as an incumbent it was created by the state as part of at least two explicit projects of statecraft. The first project, from at least the 1970s, involved retrenching the state and retreating from public services. The second involved manoeuvres against the ANC to gain advantage in negotiations over the constitutional future of the entire country—statecraft at the highest level. Further policy decisions, such as the attempted consolidation of the industry, further entrenched its incumbency. All three of these takeaways will have echoes, sometimes very loud, in the sections to come.

4.3. Minibus taxis and the SPTN

In its approach to incumbents, the planners of Rea Vaya initially drew directly from the reform proposed and underway before it: the SPTN. The SPTN had intended to incorporate all incumbent modes, and future entrants, into a single mode-agnostic subsidy framework: the City would plan a route, determine a per-seat subsidy and performance metrics, and allow any operator to bid to provide service along that route (City of Johannesburg, 2003a). As such it was envisaged to replace both the subsidy-without-competition of Metrobus and Putco, and the competition-without-subsidy of the taxis, with a system that enjoyed the benefits of both subsidy and competition. In principle this would result operators and modes increasingly specialising into those niches to which they were better-suited. Larger vehicles such as conventional buses, operated on fixed routes and schedules, would service trunk routes with the greatest passenger volumes. Lower-demand routes would be serviced by appropriately smaller vehicles, with 15-seat minibus taxis expected to offer a flexible, last-mile feeder service.

In late 2004, the City issued a request for proposals (RFP) from companies to "assist the City of Johannesburg with the restructuring of the taxi routes for the flagship project from Regina Mundi/Kliptown to Parktown and Sunninghill".[93] Figure 16 is a map of this route as proposed. This followed preliminary design work on this "flagship route", commissioned in March 2004, that expected "actual implementation of the project […] sometime in February 2005."[94] The Regina Mundi/Kliptown–Parktown leg of the SPTN's flagship route later would be adopted, largely unchanged, for Phase 1A of the Rea Vaya; the Parktown-Sunninghill leg was planned for Phase 1C but was changed to a parallel route during later planning.

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[93] File 36_05, "Request for Proposals to Assist the City of Johannesburg With the Restructuring of the Taxi Routes for the Flagship Project From Regina Mundi/Kliptown to Parktown and Sunninghill", c. December 2004.

[94] File 36_05, "Request for Proposals to Assist the City of Johannesburg With the Restructuring of the Taxi Routes for the Flagship Project From Regina Mundi/Kliptown to Parktown and Sunninghill", c. December 2004.
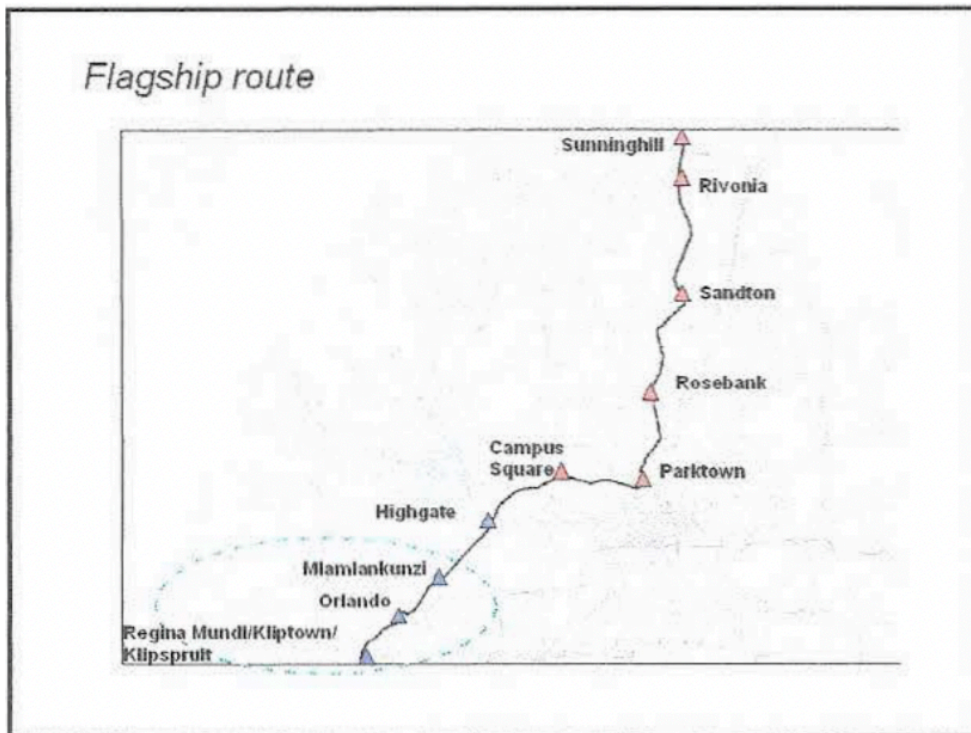
Figure 16: SPTN planned route as of December 2004.[95]

The scope of work for this RFP was:

- Investigation and identification of all the possible taxi associations that can be transferred to the flagship route;
- Identification of all the routes operated by these associations;
- Assistance with the implementation of the City's Operating License Strategy on the flagship route;
- Continuous engagement with Gautrans to develop an approach that will be used to assist the City with the issuing of operating licenses for the flagship route;
- Continuous engagement with the taxi industry to discuss any operational issues and concerns they may have, and agree on how the taxi services will be introduced on the flagship route.[96]

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[95] File 36_02, Presentation to affected taxi associations regarding the SPTN, 6 April 2006.

[96] File 36_05, "Request for Proposals to Assist the City of Johannesburg With the Restructuring of the Taxi Routes for the Flagship Project From Regina Mundi/Kliptown to Parktown and Sunninghill", c. December 2004.

Here we see foreshadowed a set of issues and concerns that would only grow in prominence and urgency as the SPTN gave way to Rea Vaya and throughout Rea Vaya's planning. These include the City's concern to integrate the minibus taxis into the new system matched by lack of information about which taxis, and how many, were eligible or necessary to be integrated; an institutional gap, requiring bridging, with "Gautrans" (the Gauteng Department of Roads and Transport), by whom the taxis were (minimally) regulated; and a political gap with the taxi industry, who would have to be informed, coaxed, and otherwise induced to join a project of which they were highly suspicious. A pair of minutes from September and November 2004 consultations with the industry are instructive. They reveal some of the dynamics of the relationship between City and industry and foreshadow many of the arguments and issues, mostly repeated verbatim, that would bring negotiations around who and how to operate Rea Vaya to a repeated standstill in the subsequent decade. Illustrative quotes for each point appear in the footnotes:[97]

   i.   Relations between taxi industry and government—soon before the Rea Vaya
          project was conceived—were mistrustful, truculent and largely lacking in good-
          will.[98]

   ii.   The basic starting point of the taxi industry that *nothing must be done* by the
          City. This at times takes the form of "nothing must be done without our agree-
          ment", or "nothing must be done that interferes with our business", but the

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[97] File 36_06, Minutes of SPTN workshop with taxi operators, 29 September 2004; File 36_07, Minutes of SPTN workshop with taxi operators, 18 November 2004.

[98] "Some Operators […] felt that no one in government has taken the time to understand and appreciate the nature of the taxi industry and the manner in which it operates." (File 36_06, September minute). "Operators expressed an opinion that the pilot project was a poison and they did not want it to go on altogether." (File 36_07, November minute). From a later consultation: one operator "had objected to this same project in 2004, but the project was being implemented in 2005. He further said that "most of us feel that these discussions are conducted in bad faith", and "how could the COJ first do it, then consult?" (File 36_04, "Minutes of the Workshop with Top Six Taxi Management", 2 June 2006).

basic position boils down to a rejection that the transport system of the city is a legitimate object of public policy.[99]

iii.   The profound opacity of the industry to the City. The officials lack even basic information about how many and which taxis operate on the route in question or details of their operations, and cannot convene them effectively.[100] This opacity was not to be remedied: for example the industry repeatedly demanded the City stop consulting passengers on fare levels, as this was the exclusive domain of the incumbent operators, although taxi fares appear to be mostly set based on operating costs rather than by consulting with passengers (Govender and Allopi, 2006).

iv.   This lack of convening power, and lack of legibility of the industry, in turn undermines (or is used to undermine) the legitimacy of the City and the project.[101]

v.   The consultation itself is mostly about lack of consultation. Even tabling a proposal with the industry for discussion is taken as trying to steamroll them. Sitting in a consultation is insufficient evidence that the industry is being consulted; a

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[99] "the SPTN project should be cancelled altogether […] the current budget for SPTN should be diverted to other needy courses" (File 36_07, November minute). "government was telling the industry what to do instead of sitting down with it to look at real issues". (File 36_07, November minute)

[100] "The chair explained once again that it was very difficult to force people to attend meetings if they were not willing to come and further explained that the City would keep on trying to bring everybody on board. He said due process was followed since the first meeting in September 2004 to get the participation of the broader taxi industry." (File 36_07, November minute)

[101] "Operators felt that they were not representing the industry because only few of them attended the meeting and that [a major association] was not present in the meeting. They felt that they did not have mandate to take decisions on behalf of the industry." (File 36_07, November minute). "no one in government has taken the time to understand and appreciate the nature of the taxi industry and the manner in which it operates." (File 36_06, September minute). "Taxi Statistics as used by the City was incorrect because the industry was not consulted when the stats were compiled". (File 36_07, November minute)

presentation on the project is insufficient evidence that the project is being ex-plained to them.[102]

vi.   Perennial conflict within the industry itself.[103]

vii.   The split of the project between an infrastructure component and an operations component, which the taxi industry took as evidence of bad faith.[104]

The last point would have direct resonance with Rea Vaya. Road infrastructure was nominally within the direct remit of the City, and amenable to well-understood engineering processes. Construction of the physical components of the SPTN proceeded accordingly and was underway by mid-2005. Operational planning, requiring dealing with a more obviously diverse range of stakeholders and incumbents, involved this engagement with the taxi industry. But, as with Rea Vaya later, building infrastructure while in tense negotiations about operations not only turned out to be putting the cart before the horse, but was also taken as evidence of bad faith on the part of the City.

At the November 2004 consultation, after objections had been duly lodged, the City presented their plans for SPTN. This softened the tone of the opposition, but the taxi industry nevertheless made clear the terms of the discussion and what they considered due to them as an incumbent:

> The Industry expressed a view that they were not against the SPTN as it sounded as a good idea but emphasised that their needs should be addressed. They further said that they will support the SPTN only if it addresses their concerns,

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[102] "the consultation process with them did not go far enough to help them to grasp the SPTN concept" (File 36_06, September minute). "the City had already made decisions about the SPTN and that it was just trying to sell the idea to them without taking into consideration problems as raised by the Industry". (File 36_07, November minute)

[103] "the industry was not united… the City should spend much of its effort in uniting the industry before implementing the SPTN. The Operators raised the current conflict over routes as an issue for them and asked whether the City expected conflicting Associations to share the same Flagship routes". (File 36_07, November minute)

[104] "The Industry felt that the City was trying to trick them by saying that only the SPTN infrastructure would be constructed. […] the City had already made decisions about the SPTN and that it was just trying to sell the idea to them without taking into consideration problems as raised by the Industry." (File 36_07, November minute)

but cautioned everybody that they will use their muscle to oppose it if it did not

address their concerns. […] they did not agree to the implementation of the project

until their concerns were addressed.[105]

In June 2006, a joint consultation involving the two major competing Soweto taxi associations was held for the first time. The two associations, Regional Taxi Council (RTC) and Top Six Taxi Management (TSM), caucused briefly at the start of the meeting before presenting a joint demand: "Metrobus operations in our townships must be withdrawn with immediate effect (in 24 hours) by whatever means […] This is not a request. It is resolved: those buses must be withdrawn. It is not a threat."[106] This, too, would be a repeated refrain in the later Rea Vaya negotiations: tensions and turf wars between conventional buses, including the City-owned Metrobus, and the minibus taxis.

In the event it was on this point that negotiations stuck, not again to move. The offending Metrobus route (Route 551 between Soweto and Sunninghill, initiated in 2005) was not withdrawn and the negotiations collapsed as a result (City of Johannesburg, 2013; Macanda, 2006). We will never know how this impasse might have been broken, since within a few months the SPTN had been "upgraded", if only yet in concept, to a BRT. Whether or not this was reasonably described as an upgrade or a major change of policy, there was no question that the BRT's operating model—and hence the implications for the taxis—would be dramatically different.

4.4. Planning bus operations in Rea Vaya

From the very beginning of the BRT conversation in South Africa, the role of the incumbents was front and centre; a hallmark feature of the South American predecessor systems had been their (supposedly) successful integration and formalisation of hitherto resistant transport operators (World Bank, 2010; Wright and Hook, 2007). "The operator business plan has been modelled on

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[105] File 36_07, "Minutes of the SPTN Workshop with Taxi Operators", 18 November 2004.

[106] File 36_03, "Minutes of The Workshop with the Regional Taxi Council (RTC and Top Six Taxi Management (TSM) and Affected Affiliated Associations", June 2006.

successful BRT systems in Latin America, where they have almost identical situations[107] to those in South Africa, with thousands of minibus taxis and hundreds of buses chasing passengers."[108]

While the shift from SPTN to BRT entailed abandoning the mode-agnostic nature of the former, in the early stages of planning it was nevertheless proposed that BRT should absorb all incumbent road-based public transport modes. Figure 17 shows the two-sided nature of the intended reform. The "single public monopoly"—conventional bus operators—involved no competition. The "numerous informal operators"—minibus taxis—involved vigorous competition in the market, stabilised and managed only partially and conditionally by a combination of minimal regulation and internecine violence. Both were to be supplanted by integration into a single "mixed system", involving competition *for*, but not *in* the market. That is to say, by running competitive tenders for a route (competition for the market) the City would benefit from competition among prospective operators to provide the best combination of services and cost. After contracting the City and the operator would enjoy the stability and predictability of a licensed monopoly operator for the duration of the contract: that is, no competition in the market.

 There would therefore be a single Bus Operating Company (BOC) for each route. A key element of the operating model was that the buses would be bought, owned, and operated entirely by the BOC. This established a necessary sequence to key elements of the implementation process. To run, the buses had to be bought and built. To be bought and built, there had to be a Bus Operating Company to buy them. For there to be a Bus Operating Company there had to be an agreement with the taxi industry as its presumptive owners. The lead time on procuring the bus fleet meant that, for a planned June 2009 "starter service", the preceding sequence of steps had to be in place to order buses by March 2008.[109] This is the most striking example of the sequential workstreams that came to be compressed into parallel, as described in the previous chapter.

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[107] The situations were not almost identical. Key differences included the structure and nature of the respective incumbent industries, their unique histories and present usage of violence, and their insertion into the political system.

[108] File 04_06, Rea Vaya Business Case for Medium-Term Budget 2008/09-2010/11, 28 January 2008

[109] Digital file, "Rea Vaya BRT Scheduling", 15 November 2007.
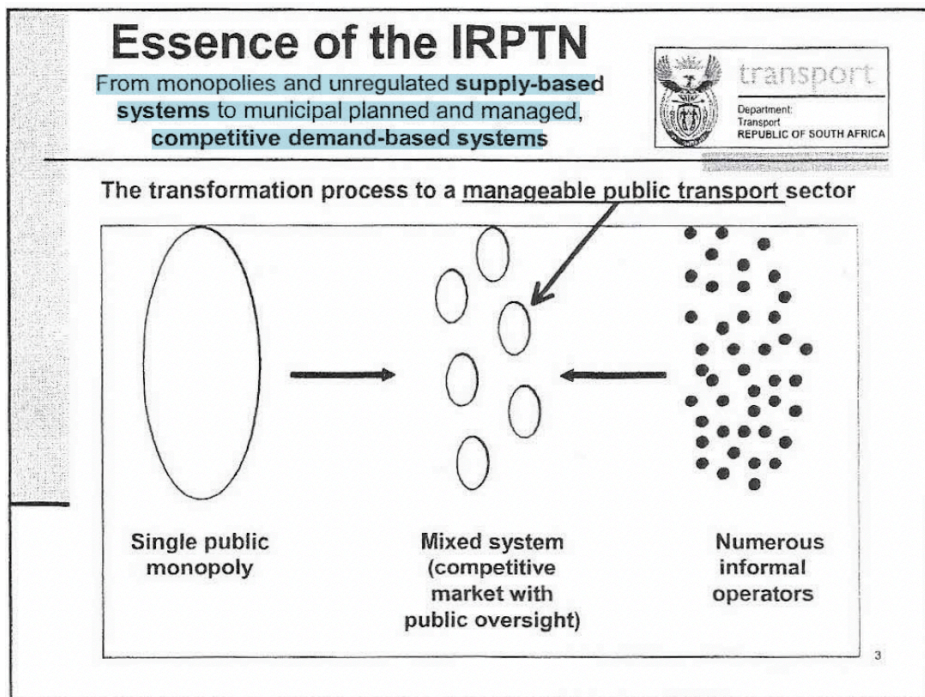
Figure 17: Proposed market structure for public transport post-BRT, 2008.[110]

The City's Finance & Economic Development Department is particularly concerned that because of the need to run the operator business plan in parallel with the bus procurement process, there is a risk that the still-to-be-formed bus companies may refuse to take on the obligation of paying for the buses that the City is going to have to order pre-emptively on their behalf. This effectively means that the City might be at risk of having to pay for the capital cost of the buses - as has occurred in some other BRT systems where the processes had to be run in parallel, rather than sequentially.[111]

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[110] File 39_13, National Department of Transport "Framework for inclusion of Taxi and Bus Operations & Labour into Integrated Rapid Public Transport Networks (IRPTNs)", 5 October 2008. "IRPTN" is Integrated Rapid Public Transport Network and is used, mostly in national-level policy, to describe a public transport system intended presumptively to be serviced by Bus Rapid Transit. This figure derives directly from ITDP's Rea Vaya scoping study.

[111] File 02_04, "Report on Proposed Amendments to Phase 1A of the Rea Vaya Bus Rapid Transit (BRT) System", 7 August 2008.

The details of the buses would be highly specified upfront, including specific designs of the technical operations and their livery, but the fleet would sit entirely on the books of the BOC. The City would not operate or even own buses; rather it would "buy" bus-kilometres from the BOC. That is to say it would pay a fixed cost for each kilometre driven by the BOC's buses, in what is called a gross-cost contract. The wider implications of gross-cost contracting as opposed to the alternatives, whose implications are largely institutional, will be reviewed in Chapter 7. This includes a discussion of PPPs, and whether Rea Vaya should even be called one. However, to understand the negotiations described in the next section, we need a brief discussion of the characteristics and rationale for a gross-cost contract.

To contract a service on a gross-cost basis is to pay a fixed fee for the service gross of costs, that is to say regardless of fluctuations in the cost to the contractor of providing the service. In a bus contract this could mean a fixed fee per bus-kilometre, out of which the operator must cover the labour, fuel, maintenance, and other costs of delivering the service. Alternatively a net-cost contract would have the state pay a fee net of costs, that is to say a fee that varies with the cost of providing the service, to keep fixed the margin earned by the operator. The basic rationale of gross-cost contracting is that it encourages companies to find ways to reduce the cost of running the service and thereby attempt to undercut one another by bidding for contracts at lower prices per bus-kilometre. There are other contracting modes, such as revenue-based contracting, but those distinctions are not important here.

To ensure that the contractor does not deliver (and charge) only those bus-kilometres that it cares to provide—that is to say those with the lowest marginal costs—and that the state does not pay for bus-kilometres that diverge from the scheduled service, a gross-cost contract would typically specify a fairly rigid standard of service. This would specify the number and location of stops; time spent at each stop; maximum speed and ideally driving quality between stops; a timetable; and minimum standards for reliability, punctuality, and so on according to the schedule. These service standards and associated financial penalties are supposed to align the interests of the operator with the state by tying profit levels to adherence to the schedule. To penalise deviations from the schedule and other service standards, and to pay per bus-kilometre, accurate measurement is necessary. This is the significance of the APTMS that caused so much trouble in the previous chapter: it is needed to accurately track the location and speed of buses, their stopping at the prescribed stations, and the number of kilometres actually served.

Failing to properly implement an effective APTMS is therefore a significant failure mode of gross-cost contracting. Other failure modes include signing an improper contract—too forgiving, and the operator need not run a good service; too strict, and mounting penalties may make the operator walk away from an unprofitable contract—and failing to effectively performance-manage the contract, such as being unable to pay for all and only scheduled bus-kilometres, or to enforce penalties for violations of the service standard. In the next section, regarding the implementation of gross-cost contracting—the centre of which was negotiations with the minibus taxi industry—these failure modes will be readily apparent.

4.5. Operator negotiations for Rea Vaya Phase 1A

Phase 1A of Rea Vaya, that is to say the first route on which a Bus Operating Company needed to be appointed, was a single trunk route between Moroka, Soweto, and Ellis Park in Doornfontein, with some feeder and complementary routes; see Figure 18 for a route map. Feeder routes are serviced by buses in mixed traffic to convey passengers to and from the trunk; complementary routes run partly in mixed traffic and partly on the dedicated lanes of the trunk routes.[112] The City defined "affected" operators to be those whose existing routes shared both origin and destination with the Rea Vaya route in question, and on that basis concluded that neither Metrobus nor Putco were directly affected.[113] Putco's strenuous objections to both the premises and conclusion of that judgement will be discussed in the next chapter; regardless, negotiations proceeded directly with the remaining affected operators in the minibus taxi industry.

In August 2006 and then August 2007, City leadership and representatives of taxi associations in Johannesburg travelled to Colombia to tour BRT systems in Guayaquil, Ecuador; Bogota, Colombia; and Pereira, Colombia. Bogota was included in both the Pereira and Guayaquil trips. These study tours have been a "defining feature of BRT learning" (Wood, 2014b, p. 2659). After the

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[112] Trunk-route buses have doors only on the right-hand side, above ground level, for level-boarding from a station in the road median. Complementary and feeder buses have both right-hand elevated doors, and left-hand ground-level doors, to convey passengers between curbside bus stops at sidewalk level and elevated stations in the road median.

[113] Digital file, "Putco impact in Phase 1A", 15 February 2009; Digital file, Presentation on taxi route restructuring, 27 February 2009.

second tour, negotiations began at multiple levels, with a BRT Taxi Steering Committee repre-senting the two local umbrella organisations, and a Technical Committee representing the 18 associations identified as "affected" by the route of Phase 1A.[114] The BRT Taxi Steering Commit-tee was given office space, support staff, and a full-time technical advisor at the City's expense (McCaul and Ntuli, 2011).

City officials did not regard the negotiations with the minibus taxis to be "the big issue".[115] In fact, the first eighteen months were spent on "raising awareness of BRT, education about BRT, change management, engagement on infrastructure rollout and taxi routeing during construc-tion, and communication about affected routes and vehicles in the various proposed phases".[116] February 2009 saw the opening of "talks about talks… in preparation for negotiations with af-fected operators".[117] These "talks about talks" dealt extensively with process questions: meeting places, resourcing, facilitation, and so on. However they also dealt with the much more substan-tial question of scope: whereas the City had opened the discussion on the question of bus oper-ations, the taxi industry immediately countered with a much wider proposal:

> It is, however, proposed that all other relevant BRT Phase 1A-related business initiatives and opportunities be included in the negotiation process as far as possible. Perhaps relevant engagement of the CoJ and clarification of possible opportunities would be required before finalizing the Scope of Negotiations.[118]

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[114] File 31_07, "Progress report on negotiations in respect of Phase 1A bus operating contract", 16 Sep-tember 2009.

[115] Interview with former municipal official, 15 June 2017

[116] File 31_07, "Progress report on negotiations in respect of Phase 1A bus operating contract", 16 Sep-tember 2009.

[117] File 31_18, "Proposed process for negotiations with affected operators for Phase 1A (Draft 1)", n.d.

[118] File 31_05, "Proposal for Negotiations for Operator(s) on Phase 1A BRT (Draft Three) - Response by the Johannesburg Taxi Industry BRT Steering Committee (First Draft)", 25 February 2009.
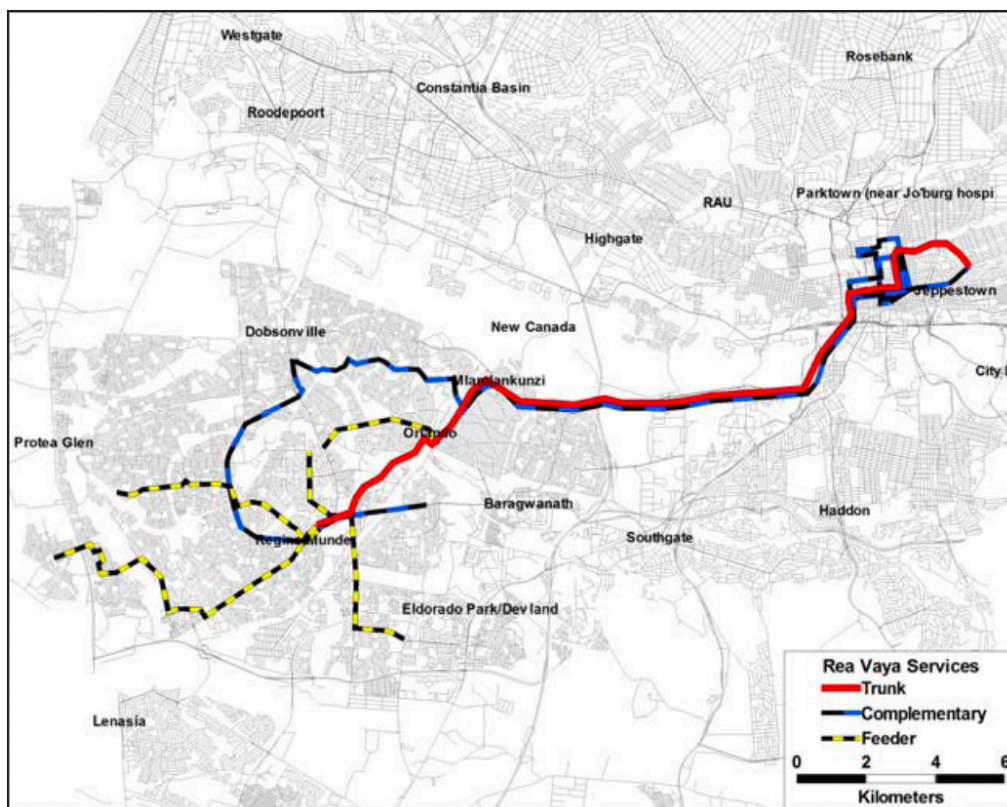
Figure 18: Rea Vaya Phase 1A Service Network (McCaul and Ntuli, 2011, fig. 1)

The taxi industry's stated concern behind including other "opportunities" in the negotiation was that other workers such as taxi rank workers and taxi cleaners should also get a piece of the action, rather than just taxi owners (who were offered a stake) and drivers (from whom the BOC would commit to recruiting its drivers). However the later content of the negotiations revealed that it was motivated in no small part by the taxi industry wanting a piece of the many contracts involved in the BRT project, of which bus operations were only one, albeit high-value, example. This as the sections to come will discuss, will become a major point of negotiations under the name of "value chain benefits".

These are also the concerns over which the negotiations were nationalised. Instead of being resolved within two months, as even the taxi industry proposed, the negotiations were effectively halted by at the national level. [119] In April, the President of the ANC and heir apparent to the National Presidency met directly with national taxi industry leadership days before national elections and joined their demands that the negotiations be halted. This was seen by some,

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[119] File 31_05, Taxi industry comments on City's negotiations proposal, 25 February 2009.

including some taxi drivers, as a campaign pitch to the taxi industry, responsible not only for their own votes but for transporting a large proportion of the wider electorate to the polls (Mail & Guardian, 2009). As the negotiation freeze persisted for several months we might reasonably speculate, with the benefit of hindsight on the 2009-2019 era in South African politics, that this also served to manoeuvre the President and his allies into their own positions of incumbency with associated rents.

In the State of the Nation address in June, the new National President announced that discussions would shortly resume, led by the Minister for Transport, and that "We are confident that unresolved issues will be dealt with to the satisfaction of all parties. *This will include the important issue of how all stakeholders will benefit from the initiative."* The italics here are directly from the subsequent Mayoral Committee report on the City's negotiation framework, reflecting the significance that its drafters assigned to the sentence. This commitment, restated subsequently, became a political mandate for the City to guarantee that no taxi operator would be made worse off by the implementation of Rea Vaya.[120]

Upon resumption of negotiations the Minister of Transport announced the establishment of a national working group and made clear that

> The issues for negotiations include the ownership structure for the existing taxi operators and workers, the institutional arrangements for the value-chain benefits and Broad Based Black Economic Empowerment in various areas.[121]

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[120] File 31_15, "BRT Value Chain Framework Document, Final draft for Mayoral Committee", 9 September 2009.

[121] File 31_15, "BRT Value Chain Framework Document, Final draft for Mayoral Committee", 9 September 2009. Broad-Based Black Economic Empowerment, BBBEE or more commonly just BEE, is the broad policy and associated regulation for preferential affirmative action targeting race groups who had been systematically disadvantaged under apartheid. It would have applied to all the other contracts in BRT, but not meaningfully to the bus operating contract which had been exempted from procurement rules. Even with respect to the other contracts, it is not clear whether it affected outcomes.

These "value chain benefits" were the opportunity to participate, as concessionaire or staff, not just in operating buses but in managing, cleaning, and guarding stations; infrastructure construction; bus manufacturing; fare collection; and miscellaneous associated activities.[122]

This had at least two key results. The first was to wrench open the comparatively narrow negotiation over bus operations—where the key questions were "who gets to participate?" and "how much will they be paid?"—into one about a much more open-ended, not yet fully defined list of potentially dozens of contracts, each with their own possible approach to benefiting the taxi industry. The approaches mooted included ring-fencing contracts, as with the buses; preferential procurement; negotiating joint ventures; corporate social responsibility programmes; and a training programme.[123] The second was to take relatively simple questions and both re-open them and make them more complex. For example station management had hitherto been, compared to the fare system and the bus operating company, a relatively straightforward and uncontentious issue. However a July 2009 discussion document describes, in light of needing to incorporate the taxi industry in various ways, a set of alternative models for station management involving different possible contracting relationships between the City-owned Metropolitan Trading Company, taxi-industry-owned management companies (one or several), and managers, cleaners, security, and other staff recruited from the taxi industry.[124]

This all delayed the project. A limited "starter service" had been planned to begin operations for the Confederations Cup in June 2009, as a test run for the following year's soccer World Cup. In May 2009, the Minister of Transport formally "advised" the City of Johannesburg against a June launch in light of ongoing national negotiations with the taxi industry, suggesting September instead. In August 2009, Walter Hook of ITDP wrote in a memo:

> The consultants recommend that the CoJ accept that the approach to stand
> back and allow the taxi industry to form itself into a BOC has failed to produce an
> effective BOC in time to begin operations, and that the COJ must intervene in the

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[122] File 31_15, Value Chain framework document, September 2009.

[123] File 31_15, "BRT Value Chain Framework Document, Final draft for Mayoral Committee", 9 September 2009.

[124] File 31_14, "BRT Stations: Operational Value Chain Model", 13 July 2009.

process immediately if it is to ensure that a BOC takes over the operation of the SPV within the targeted six months timeframe.[125]

This SPV, or Special Purpose Vehicle, was an interim fallback plan put in place as it became clear that the taxi industry would not be operating Rea Vaya, either at its original planned launch in June 2009 or the postponed launch in September. The Brazilian export credit agency funding the bus purchase had required a Bus Operating Company agreement to be in place no later than 31 August 2009. A company, Clidet No. 957 (Pty) Ltd, was registered by HSBC bank—this company was the SPV—with a single share owned by the newly-registered Phase 1A Johannesburg Bus Rapid Transit System Management Trust under the administration of HSBC (McCaul and Ntuli, 2011, p. 1).[126] This company was used to conclude the financing for the bus fleet, facilitated by HSBC, but on 28 August 2009, was contracted to operate the Rea Vaya buses and begin operations on 30 August. An interim CEO and an interim general manager were appointed to run Clidet, drivers were recruited from the taxi operators involved in negotiations, and other operational staff were seconded from Metrobus and Putco (McCaul and Ntuli, 2011).

Clidet, as the interim BOC, is required to render and has been rendering, bus operating services on an interim basis since 30 August 2009. The taxi operators are expected to acquire control of Clidet on or about 12 April 2010, following the finalisation of the aforesaid negotiations.[127]

This had immediate repercussions. In the run-up, many in the taxi industry made clear they would not stand for this interim service. The national association Santaco called for a national taxi strike—typically meaning not only the withdrawal of service but also the blocking of major roads—and multiple local and provincial associations sought a legal interdict to prevent the service from running (Alcock, 2009; Chaudhry, 2009; "Taxi operators decide on indefinite strike

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[125] File 31_04, "Memo on the Creation of the BOC", 23 August 2009.

[126] According to the Companies and Intellectual Property Commission there are over 1000 companies registered under "Clidet" in various industries in South Africa, suggesting it is a name used for bulk registration of "off the shelf" companies.

[127] File 03_01, "The BOC Structure: Considerations Regarding The "Golden Share" Alternative", 19 January 2010.

against BRT," 2009; Venter, 2009). An affidavit from within the industry in support of the interdict read that

> The taxi industry is known for unfortunate incidents of violence in the past due to the competition in respect of taxis and routes between the different taxi associations [...] I fear that should the BRT system be implemented — the desperation of taxi people involved may well lead to serious incidences of violence. (quoted in Alcock, 2009).

The City laid on significant security but in the first week of service, attacks from taxis on Rea Vaya buses wounded a Rea Vaya driver and a policeman (Alcock, 2009; "Taxi drivers incite violence over BRT," 2009). The taxi associations denied involvement ("Rea Vaya rocked by shooting, but buses still running," 2009). This violence continued through the next months of negotiations, directed at both Rea Vaya buses and at taxi operators participating in the process ("Pro-BRT taxi operator shot dead," 2009; SAPA, 2010).

Meanwhile negotiations proper had been convened on 5 August 2009. See Figure 19 for a detailed timeline of the negotiations which followed. As late as January 2010 City documents show that the taxi industry was expected to take up control of the BOC by April 2010, although in the end it took 14 months until a contract was signed in September 2010 (Venter, 2013).[128]

These negotiations proceeded through a series of steps. Again, what may have otherwise been "who participates?" and "how much are they paid?" was made significantly more complex, and open-ended. In the retrospective words of the professional facilitators,

> The Phase 1A negotiations were the first of its kind. What made it particularly challenging was uncertainty as to the scope of the issues in the negotiation as well as whom the parties were to the negotiations. [...] [an] open-ended protracted negotiation process, where delays added complexities to the negotiations, and rising costs for the CoJ.[129]

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[128] File 03_01, "The BOC Structure: Considerations Regarding The "Golden Share" Alternative", 19 January 2010.

[129] Digital file, "Facilitators' Thoughts on Phase 1B: the Participation Model", 2 September 2010.

Date	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11
Month in negotiation period							1	2	3	4	5	6	7	8	9	10	11	12	13	14					
Milestones in negotiation process																									
Phase 1A preliminary discussions	▬	▬	▬	▬	▬																				
Phase 1A negotiations begin							◆																		
Presentation of City proposals								▬	▬																
Phase 1A trunk service starts operations								◆																	
BOCA signed with Clidet								◆																	
Loss of income agreements										◆			◆			◆									
Initial fee/km proposals put forward											◆														
Participation Framework Agreement signed												✦													
Negotiation Closure Agreement signed																	✦								
Employment Framework Agreement signed																		✦							
Value Chain Agreement signed																		✦							
All financial agreements signed																			✦						
Amended BOCA signed with shareholders																			✦						
Offer letters issued																			✦						
Final plenary session ratifying final shareholders and board of directors																				✦					
Handover period and vehicle scrapping process																					▬	▬	▬	▬	
Piotrans takes charge of the BOC																									◆

Figure 19: Timeline of key milestones in the negotiation process (McCaul and Ntuli, 2011, fig. 2)

Instead of just paying the taxis more than they were already making to run the BRT, a whole series of agreements was now needed to deal with different aspects of the system. The first agreement that required negotiation was how to deal with competition between Rea Vaya and the taxis, a product of not settling the details of BRT operations before BRT operations began. Rea Vaya's planners had assumed that the taxi operators incorporated into the system would remove their taxis from those routes, releasing demand for the new buses. The first two months were therefore spent negotiating how to remove taxis while keeping open the question of whether their owners would become shareholders in the BOC. The settlement reached was for the City to store the taxis pending later determination of their fate "so that the owners could keep their options open" while a loss-of-income agreement was negotiated (McCaul and Ntuli, 2011, p. 6). Three further such agreements were concluded, covering increasing numbers of taxis as more buses were rolled out, until the BOC was finally turned over to the industry. In the eventual agreement, participating taxi owners bought into the BOC by turning over their taxis for sale at auction or scrap, with the latter being valued at R54 000—the amount assigned to a scrapped taxi by the existing Taxi Recapitalisation Programme.

A Participation Framework Agreement (PFA) signed in January 2010 established the process for determining "who participates". Much of this agreement was to improve the legibility of the minibus taxi industry to the state, and the City in particular—including the legibility of matters nominally under explicit regulation. For example, the PFA required taxis to "prove" that they

serviced routes affected by the BRT, through membership of an affected association, and that the taxi had the appropriate permit, operating license—which was supposed to have super-seded the permits, but in practice had not—or "a receipt for having applied for an operating li-cence that had been granted but was not yet issued" (McCaul and Ntuli, 2011, p. 7).[130]

Then, the Financial Agreement covered how much the City would pay the BOC, and through it the 585 taxi owners that it had been determined would own it. The basic terms of a gross cost contract were established early. The City would hold the risk of poor ridership as system reve-nues would accrue to it directly. The BOC would be paid per kilometre, but was guaranteed a minimum number of such kilometres as insurance against the City scaling back the service dra-matically. The process for determining a fee per kilometre involved establishing the prospective costs of the BOC, both fixed costs—mostly staff—and variable: "diesel, wages and salaries (ac-cording to the agreed company organogram), tyres, licences, staff transport, fleet insurance, and so on" (McCaul and Ntuli, 2011, p. 7). Capital costs for the bus fleet were a foregone conclu-sion, as the fleet had already been ordered, financed, and delivered. Then a profit margin was negotiated, starting with initial offers from both sides, and then a long process involving mostly the City dramatically increasing its offer in steps. In May 2010 a monthly dividend per share was agreed on, and in July 2010 an equivalent fee/km was agreed.

This was, however, not the end of "how much are they paid?" Once the headline figure—fee/km—was agreed, the negotiations turned to cashflow. A taxi business runs on daily cashflow in the form of vehicle rental from drivers; ownership of a company confers income in the form of dividends much less frequently, and crucially not at all for the first years of business because of legal requirements for liquidity and solvency. This did not satisfy the prospective owners of

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[130] Originally and still at the time of Rea Vaya's planning, taxi permits were issued on a "radius" basis, allowing the holder to operate anywhere within a defined area. In 2005, to try reduce the competition that resulted from this the permits were replaced with operating licences that de-fined a "route", although in fact only specify origin and destination for each taxi (Ingle, 2009). The finer details of the route in between origin and destination are negotiated directly amongst operators (Joubert, 2013).

the BOC. The next months were dedicated to intensive negotiations on this question, culminating in a further Compensation for Loss of Income Agreement in August 2010:

- providing for the monthly payments by the City per share for four years;
- allowing the City to see monthly management accounts and agendas, minutes and board packs of board of directors and shareholder meetings;
- providing that no dividends be declared for four years;
- providing that no non-essential expenditure be incurred; and
- requiring each operator to sign a restraint of trade agreement – namely that they would declare the taxi services they still operated on competing routes, and would agree not to expand these services. (McCaul and Ntuli, 2011, p. 8)

This allowed the signing of a Financial Agreement at a lower fee/km than agreed in June; the City would instead make upfront payments not tied to service kilometres, while the previously agreed total amount payable over the 12 years of the contract would remain the same. The structure of this agreement cut against the original terms of the negotiation, the BOC model, and indeed the very principle on which BRT contracts are typically designed. The plan until this point, based on international BRT guidelines, had been a gross-cost contract: a fixed fee per bus-kilometre, from which the BOC would have to cover its costs. The new Financial Agreement entirely abandoned this by "floating" the fee per bus-kilometre based on a basket of input costs calculated monthly. This served to transfer all risk for input costs, such as fuel prices, from the operator to the City. In effect this had the City carrying every major risk of Rea Vaya, without taking corresponding control over the operations of the system: the worst of all contracting worlds. Even the idea that the BOC should hold performance risk, that is potentially suffer reduced profits for failing to fulfil the terms of the contract, was undermined by the concession in principle that expected returns to the BOC's owners would be guaranteed.

Also in August 2010, the interim Bus Operating Company Agreement (BOCA) was amended to reflect the intervening negotiations. Lastly, the negotiations resulted in an Employment Framework Agreement (EFA), making provision for the hiring of Rea Vaya's operational staff from the ranks of taxi workers made unemployed by the withdrawal of the affected taxis; a Value Chain Agreement that ring-fenced the station security and cleaning contracts for companies owned 70% or more by the BOC shareholders; and a Negotiation Closure Agreement that settled details of the handover and remaining loose ends. After various processes of due diligence by both sides and a four-month handover, the taxi industry took sole charge of the BOC on 1 February

2011. They renamed it PioTrans (Pty) Ltd and appointed a CEO from Fanalca, the Colombian group operating BRT routes in Bogota, Santiago, Panama City, Cali, and Monteria. Twenty-one months of negotiations and "talks about talks" later, a little over four years in total after the Rea Vaya project was approved, and fourteen months after the bus system was operational, the taxi industry was running the buses.

As a later document summarised the process:

> This was an open-ended process of negotiation with few, if any, limits on what was up for negotiation. Political guarantees that participation would result in no-one being worse off, owners likely to be better off, and no loss of legitimate profits and jobs gave the City team little space to manoeuvre on the financial deal.

> Operators who participated came into the process with these expectations, and claimed what had been guaranteed and promised. The City provided technical and other resources to fully capacitate the operator negotiating team. The operator team was also afforded direct access to the political principals of the city team; what could not be achieved in negotiations was escalated by the operator team on several occasions to the political level.

> From a City-interest perspective, this option places the City team in the weakest position of all options, and the operators in a very strong position. [This negotiation approach] is undoubtedly the option of choice from an Operator-interest perspective.[131]

Wheeling and dealing

Why the City should have conceded so much, repeatedly, throughout the negotiations is hard to say for sure. However we can make inferences from the above account of negotiations.

The City needed a deal. The transport department had gone all-in on BRT, largely based on the advice of the international consultants. They had made the commitments necessary to secure

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[131] File 29_17, "Discussion Document: Talks about Talks: City Team Starting Points and Position", c. August 2010.

funding and political support for the largest municipal infrastructure project in South African history: funding and political support that was tied into delivering before the 2010 soccer World Cup. There was enormous pressure to get it done: "we would be fired if we didn't implement this thing by the end of 2009. The City would be in disgrace and the transport guys would have to find another job—that type of thing."[132] Not only could the City not walk away from the negotiations, but it had hard deadlines that were jeopardised by every delay.

The taxis, as the incumbents, did not need a deal. Their starting position had been no Rea Vaya. They had received assurances from the City that they were indispensable to the implementation of BRT, and had themselves made clear that there would be no BRT without them. The likely consequences of crossing them were generally understood. The operators successfully appealed to an ascendant National President who committed not only that Rea Vaya would include the taxi operators, but that every operator would be better off as a result.

One side that needs a deal, fast, and one who does not, and has all the time in the world, would make any negotiation extremely lopsided.[133] The case clearly illustrates a wide range of the tactics and structural advantages that an incumbent can take advantage of to defend its position in the face of reform (Capoccia, 2016). The taxi industry was able to repeatedly delay the negotiations, confident that a deal would be reached on their terms, until the City quite literally ran out of time. It set the agenda for negotiations by repeatedly expanding them to areas that promised additional profit and deeper entrenchment in the BRT. For its part the City could not credibly commit to imposing any negative consequences on the taxi industry: lacking regulatory power, it could not restrict taxis from competing with the BRT; lacking a monopoly on violence—not just the City but the entire state—it could not protect itself from a disappointed or aggrieved incumbent. Indeed, elements of the minibus taxi industry demonstrated this with tragic results in the first months of Rea Vaya, intimidating, wounding, and killing their opponents.

The consequences of these lopsided negotiations were clear: the City paid enormous rents to just this first set of incumbents. It committed to paying each erstwhile taxi operator nearly R1,4m on average, in 2018 rands, over 12 years for each taxi removed from the route, just in

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[132] Interview with former municipal official, 15 June 2017.

[133] In 2021 a journalist asked the CEO of Piotrans "What's your one top tip for doing a deal?" His answer: "Be in control of the time-frame." ("BACKSTORY: Piotrans CEO Mochele Noge," 2021)

restraint-of-trade payments. See Table 8 for a summary of the figures. These guaranteed payments, originally intended to last only four years as a transitional measure, were extended to the full duration of the contract at the taxi operator's request (Pegasys, 2018).

This is on top of the actual fee per kilometre the City pays to the BOC, the fixed profits on which accrue to those same operators in the form of dividends. This operating fee, originally intended to reflect quality of service, degenerated into just another guaranteed payment. The BOC had no incentive for efficiency as all costs were passed on to the City through the "floating" fee per bus-kilometre. Lacking both a functional APTMS, discussed in the previous chapter, and the power to impose outcomes on the taxi industry meant that there was effectively no performance management on the contract, with predictable consequences for service reliability and quality. To cap it off, the taxi industry—who at least had a claim to expertise, and incumbency, when it came to running public transport—also secured guaranteed contracts for station security and cleaning, bartering one incumbency into several.

Table 8: Rea Vaya Phase 1A cost of compensation (in restraint of trade payments) to the City of Johannesburg (Pegasys, 2018, tbl. 4—2). Many of the taxi operators had purchased more than one share in the BOC, for one retired taxi per share: hence the per shareholder/per share difference.

Period starting	Period ending	Cost to City	Average cost per shareholder	Cost per share
01 Feb 2011	31 Jul 2018	R 440 870 595	R 1 409 532	R 753 625
01 Aug 2018	31 Jan 2023	R 352 000 000	R 1 124 601	R 601 709
Total over 12 years (at 2023)		R 792 870 595	R 2 533 133	R 1 355 334
Current monthly cost		R 6 400 000	R 20 447	R 10 940

The City entered into this deal with clear eyes. At the time the BOC contract was signed the City estimated that the final financial agreement inflated the value of the BOC by 30% over a commercial deal, that is by R50m per year or R680m in real terms over the course of the contract.[134]

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[134] File 11_12, "Ratification of the fee per km and compensation for loss of income agreement in respect of the negotiations with the Phase 1 A Taxi Negotiation Team", Report to City Manager, August 2010.

This makes this contract arguably the most expensive contract any level of government has ever concluded with any operator and has the potential to become a BRT precedent and 'national nemesis' for the first really progressive public transport system in South Africa. Not only taxi operators, but bus operators such as Putco, can push for similar deals on the basis of precedent when negotiations include them in future. […] To put it starkly, the City will probably not be able to afford any future contracts negotiated in the manner of Phase 1A again. If this route is insisted upon, Phase 1A may be the first and last of Rea Vaya.[135]

"National nemesis" or no, this indeed set two precedents. The first is for subsequent BRTs in other South African cities, whose taxi operators followed this process closely and explicitly drew on it in their negotiations (Pegasys, 2018). The second precedent was in Johannesburg itself. Leaving for the next chapter Rea Vaya Phase 1B, the original twelve-year operating contract for Phase 1A was due to expire in January 2023, by which time a new contract would have had to be awarded by open tender. In 2021, Piotrans began demanding that the contract be extended ("Rea Vaya Operating Company PioTrans appeals to the City of Johannesburg to extend its contract," 2021), accusing the City of "cheating" its shareholders (Mafisa, 2022), and pointing to the prospect of job losses among its staff (Arnoldi, 2021).

The association's other concern is with the initial consultations done with taxi owners in 2009, prior to the implementation of the first BRT in Johannesburg, where the contracts were not properly explained. [The association] believes government did not do enough to explain the contractual terms, cognisant of the fact that the taxi owners had never operated a BRT system before. (Arnoldi, 2021)

The tender for the operating contract was released on 19 August 2022, and closed only a month later on 20 September—a very short time for any non-incumbent to prepare a bid for a large, complex contract. As of 31 January 2023—the nominal end of Piotrans' contract—the outcome of the tender had not been announced, and as of April 2023 Piotrans buses remain in operation.

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[135] File 11_12, "Ratification of the fee per km and compensation for loss of income agreement in respect of the negotiations with the Phase 1 A Taxi Negotiation Team", August 2010

4.6. Conclusion

This close examination of the negotiations around the formation of the first Bus Operating Company reveals a number of insights about Rea Vaya, and projects like it more broadly.

First, the minibus taxi industry is best understood as an incumbent in road transport. This is seldom denied but sometimes obscured. The City's negotiators approached the taxis partly, if not primarily, as an *object* of development (Mitchell, 2002). A primary purpose of their incorporation into Rea Vaya was their "formalisation". The taxis however were clear and explicit from the start: the stakes were their existing revenue and control of transport along Rea Vaya's route, and they intended to cede neither to the City. A clearer framing of the negotiations and their stakes may have enabled a more strategic approach, beholden less to either the taxi industry's delaying tactics or its political power. As ITDP wrote, "Some clarification of the goals of this taxi industry transition would help in deciding different approaches."[136] More to the point, a clearer framing of the negotiations and their stakes allows an analysis that assigns the taxi industry its full, powerful agency in the process.

Second, incorporating minibus taxis into the BOC in the manner they were did not solve the problem of incumbency; it may even have entrenched it. A negotiated contract, giving way to competitive tenders in subsequent contracts (at 12-year intervals) was more or less explicitly intended to "tame" the industry. Twelve years of running a bus company would equip the BOC to compete with other operating companies. Piotrans and its allies having demanded the contract be renewed without tender, we can see that in fact the City has simply created a new incumbent, one used to inflated profits on a guaranteed basis.

Third, the contracting model as planned was predicated on a particular distribution of risk among the parties. The operator would hold the risk for their costs and their performance, to keep them efficient and performing well; the City would hold the risk for ridership. Once the terms of the contract changed with respect to that risk, for example by the City purchasing the buses and guaranteeing revenues, the model was undermined. A clearer sense from the start of the stakes of incumbency, and a contracting model designed accordingly, could have anticipated those later tactical concessions or at least incorporated them in a more coherent way.

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[136] File 31_04, "Memo on the Creation of the BOC", 23 August 2009

Finally, clarity about the nature of the taxis' incumbency may have allowed a simpler approach to the negotiation that preserved the contracting model and could even potentially have saved money. As the World Bank noted to the City's planners in a seminar on international experiences with BRT: "it is valid [to] pay your way out of [the] problem".[137] In the end, the terms of the contract were a buyout in all but name: the taxi industry was given multiple guaranteed revenue streams with no downside and no risk. An actual cash buyout, while perhaps distasteful to the conceits of the BRT model, would have allowed a competitive tender and much lower operating costs for the system.

As for the statecraft of the taxi negotiations, we can see how contentious is the form of the state, here particularly in the nature and purpose of the border between private and public sector, and how the function of urban transport is delivered. Both sets of parties in these negotiations articulated a vision of the urban state and demanded a particular role in it for each actor. By the end, the City had secured its preferred form of the state for urban transport; the taxi industry, however, extracted by way of concession a dramatically more central, more powerful, and more lucrative structural role for itself.

The next chapter deals with Phase 1B of Rea Vaya, and negotiations with Putco over its operations. It will also make clear, by explicit comparison to this chapter, how the state was not merely negotiating with a potential service provider, but engaging in statecraft: contesting, under not entirely favourable circumstances, its own nature and structure.

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[137] File 39_37, Handwritten notes from World Bank seminar, n.d.

5. We Need to Talk About Putco: the aesthetics of informality

The previous chapter dealt with the negotiations leading up to the formation of the Bus Operating Company for Phase 1A of Rea Vaya, focusing (as those negotiations did) on the minibus taxi industry. However, on the crucial Soweto-Johannesburg CBD route there was another key incumbent transport operator, whose incorporation into Rea Vaya was a matter of high contention. This chapter deals with that operator, Putco, and its incorporation into Phase 1B of Rea Vaya (although it also covers the brief discussion and long subsequent controversy over its inclusion in 1A).

Phase 1A of Rea Vaya, true to its name, had been intended to be merely the first fraction of the first part of a much more ambitious bus network. This system was envisaged to eventually service the entirety of the City of Johannesburg: its stated goal was to place a Rea Vaya station within 500m of the dwellings of 85 percent of Johannesburg's population (City of Johannesburg, 2007). See Figure 20 for the full proposed Phase 1 map. Phase 1B was proposed to the City's Mayoral Committee on 7 October 2010, where key principles were agreed "in respect of:

- Routes and contract packages
- Fleet numbers, specifications and procurement
- Participation model in respect of affected public transport operators."[138]

As presented to the same committee in March 2011, Phase 1B would consist of two new trunk routes, three new complementary routes, and seven new feeder routes: see the map in Figure 21.

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[138] File 29_10, Mayoral Committee report on Phase 1B Business Plan, 4 March 2011.
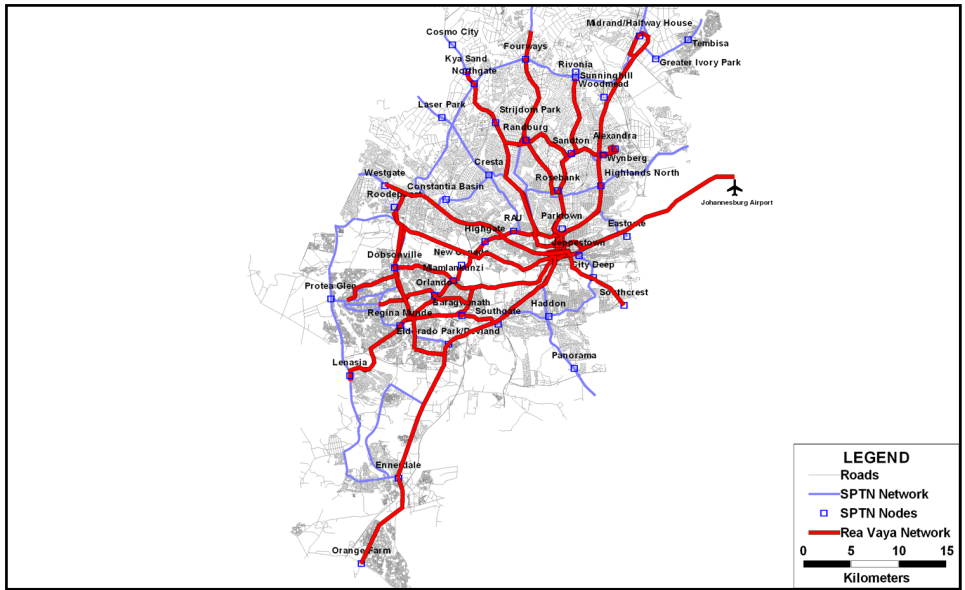
Figure 20: Full proposed Rea Vaya network including feeder routes, 2008; 85% of Johannesburg's population would live within 500m of a station.[139]
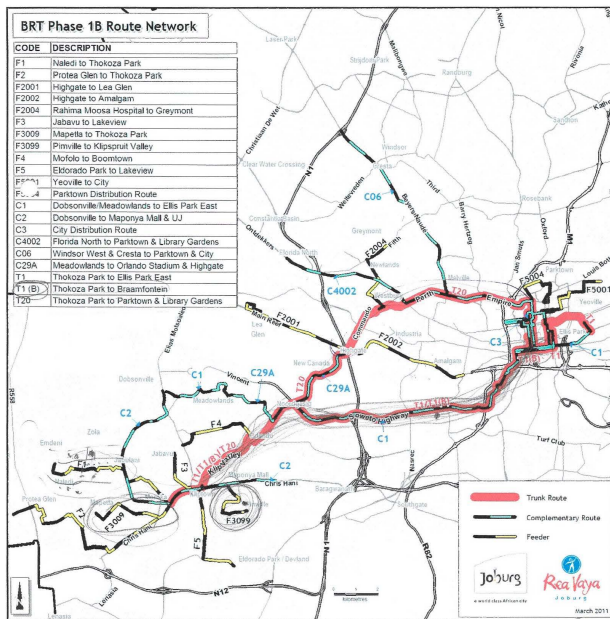
Figure 21: BRT Phase 1B Route Network, 2011.[140] **The northern leg runs on the Empire and Perth arterial roads; the southern runs on the Soweto Highway.**

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[139] Digital file, "Rea Vaya Bus Rapid Transit (BRT) Project: UATP [African Association of Public Transport] Presentation", 26 March 2008

[140] File 32_07, Phase 1B Information Sheet: Routes and Stations, May 2011

The two new trunks would, like the first from 1A, run from Soweto into central Johannesburg: one along a major arterial road and the other on the Soweto Highway. This reflects the early, stated goal for the project of giving the City a transport service under its direct control between Soweto and Johannesburg—hitherto the domain only of the taxis and the provincially-contracted Putco Soweto, as the company's relevant division was called.[141] The fact of an additional incumbent whose incorporation into the operations of Rea Vaya was, if not necessary, then at least largely presumed, significantly complicated the negotiations—especially with respect to Phase 1B.

Putco's involvement in Rea Vaya Phase 1B is important not just for the sake of completeness. First, it is a much less-told part of the story of Rea Vaya. Negotiations with the minibus taxis came first, and were nationally unprecedented in a number of ways. They were more dramatic, with the parties starting much further apart and proceeding through both violence and threats thereof. And they fit into the global story of BRT, as a technology not just for rapid conveyance of passengers but for the "formalisation" of problematic informal incumbents. The story of the minibus taxis has therefore been told, to a certain degree—although never with the detail and data presented here. Putco, on the other hand, has been neglected. I could find no academic literature on the negotiations between the City of Johannesburg and Putco or the contract that resulted. Putco's involvement at first blush could be described as a bus company being contracted to run a bus company, which perhaps is why it has not risen to academic notice. However, as this chapter will show, to dismiss it so fails to appreciate the history, complexity, intensity, political economy, and antagonism of the negotiations.

Second, it is notable not just for its differences to the minibus taxi industry negotiations, but for its similarities too. As this chapter will show, the degree to which Putco represented a "formal" operator, to be contrasted with the "informal" taxis, with corresponding implications for policy and relations to the state, is largely a conceit. As the chapter will show, if informality is characterised by activities that "lie beyond or circumvent state regulation." (Lindell, 2010, p. 5 quoted in Goodfellow, 2015) then the nature of Putco's operations and regulation, visible in its history and in the dealings over Rea Vaya, show it to be an informal operator. To try and explain why it

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[141] Interview with former municipal official, 8 June 2017; Interview with former municipal official, 16 May 2018.

has not been treated as informal in policy I follow Ghertner (2015) and Gastrow (2020) in arguing that the formal/informal distinction between the taxis and Putco is grounded largely in aesthetics, based on their respective bus technologies and racial associations. Challenging this formal/informal distinction is consequential both academically and for policy. It undermines the idea of transport "formalisation", and how formalisation is propounded in global policy discourses around BRT. It implies a much more complex constellation of institutions and actors to be approached with far greater nuance whose nominal formality or informality is beside the point, if not merely a semblance.

Third, building on the above, it will show how the formal/informal distinction is not just a matter of ideological structure, but actively constructed and mobilised by the various actors in this chapter. At times it pays to be informal, free of the heavy hand of the state; at other times informality becomes an aspersion to be cast at rivals, undermining their claims to legitimate participation in systems of mobility. This formal/informal distinction draws on discourses of entrepreneurialism, criminality, and race, all of which were strategically mobilised over the course of these negotiations.

Fourth and finally, PUTCO's ambivalent relationship to Rea Vaya and transport reform in Gauteng more broadly remains a matter of pressing public policy. In 2022 the South Gauteng High Court laid down what were only the most recent examples of a long line of legal judgements, negotiated settlements, and other determinations that keep the question of "what to do about PUTCO" at the very centre of transport policymaking in Gauteng.

5.1. Putco before Rea Vaya

Putco had been established as the Public Utility Transport Corporation in 1948 as an conglomerate of several companies struggling in the face of widespread bus boycotts. That is to say, it was in its very existence a means of defending and consolidating the incumbency of existing operators against external challenge. Putco was the first bus operator to be subsidised on a permanent basis, at first by large employers and then by the state (Competition Commission, 2021; Manuel, 2019; Naude, 1999). It grew to exercise a licensed monopoly over a significant portion of commuter transport, disrupted more often by moments of political and popular resistance—most famously the bus boycott of 1957 documented by First (1957)—than by business competition. As a result Putco has been the largest conventional bus operator in Gauteng from its

inception, in recent years operating a fleet of about 1 307 conventional buses in and immediately around Gauteng compared to 419 operated by Metrobus and 217 buses running on Rea Vaya's network (Competition Commission, 2021).

Its dominance is largely due to the permit system first introduced in the 1930s. This gave open-ended area-based exclusive licenses to specific transport operators to offer scheduled transport services. Through these permits Putco enjoyed a legal monopoly in perpetuity over the majority of routes between the (then-much smaller and more numerous) municipalities in and around today's Gauteng. This included a total monopoly over buses between the two major conurbations of Johannesburg and Soweto, now both within the metropolitan City of Johannesburg (Metrobus, 2005). This monopoly was exercised by Putco's Soweto Business Unit, almost always just called Putco Soweto.
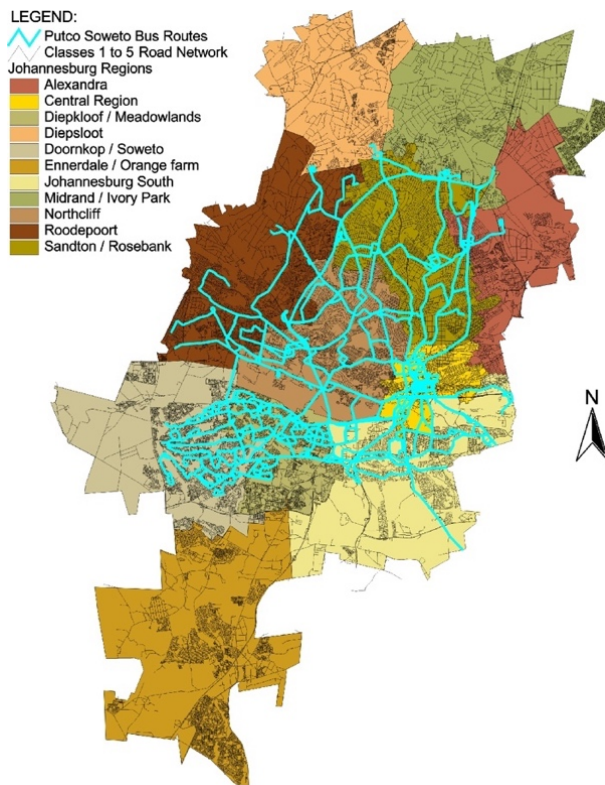
Figure 22: The Putco Soweto route network in metropolitan Johannesburg before the advent of Rea Vaya.[142] (Johannesburg ITP 2003: fig 3-12)

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[142] As both SPTN and Rea Vaya began as Soweto-CBD services, this was the most immediately relevant portion of Putco's service.

In 1997, as part of a wider national set of reforms to land transport following a 1996 White Paper, the hitherto open-ended contracts enjoyed by Putco and other conventional bus operators were converted to interim contracts with durations of between six months and three years, and transferred from the national government to the relevant provincial transport departments. This was a negotiated settlement: "Government recognised that the life-long permits could not simply be withdrawn or terminated" (*PUTCO (Pty) Limited v MEC*, 2022). The intention of the interim contracts was to give newly mandated provincial governments time to prepare the legally required long term solution: putting the routes out for competitive tender (Walters, 2018, 2010). Interim contract IC48/97 was signed between Putco and the Gauteng Provincial Government to service Soweto to Greater Johannesburg—as the urban core, much smaller than today's Johannesburg, was then called—with 441 buses until 31 January 2000; meanwhile, the Province undertook to formulate the Gauteng Bus Masterplan, its own rationalisation programme (Britz and du Plessis, 2001).

In 2001, amidst legal disputes over the contracting regime and resistance to competitive tendering from bus workers—fearing job losses if Putco was not reappointed—a so-called Tripartite Agreement (TA) was concluded between the Minister of Transport, the Southern African Bus Operators Association (SABOA), and various labour unions in the industry. The TA, among other things, enshrined a right of first refusal for the incumbent operators for future tendered contracts (*PUTCO (Pty) Limited v MEC*, 2022). However in 2001 for reasons unclear the National Department of Transport placed a moratorium on tendered bus contracts, not to lift it for 17 years (Walters, 2020, 2018). This may have been the result of the incumbents—operators and workers—successfully going over the Province's head and nationalising the negotiations, as we saw the minibus taxis do in the previous chapter. Faced with an national instruction not to go to tender, yet needing the buses to keep running, provincial governments began renewing the interim contracts against the law and the constitution; the few already-tendered contracts simply degenerated into uncontracted month-to-month arrangements on similar terms to their erstwhile contracts (*PUTCO (Pty) Limited v MEC*, 2022).

As of early 2022, thirty interim contracts remained in place nationwide; eight in Gauteng, covering 80% of buses operating in the province (*PUTCO (Pty) Limited v MEC*, 2022). In 2017/18 Gauteng's interim contracts had a budgeted value of just R1,2bn, three times the value of the Province's tendered contracts (AECOM, 2018). That is to say, 25 years after their adoption as a short-term measure, to smooth the transition to a legally and constitutionally-permitted regime of

contracting, illegal and unconstitutional interim contracts still governed the lion's share of public transport managed by Gauteng Province.

In 2022 the uninterrupted and illegal rolling-over of contracts resulted in a finding of illegal procurement practices against the Gauteng Provincial Government by the Public Protector, a sort of constitutional super-ombudsman (Public Protector, 2022). Also in 2022, the South Gauteng High Court set aside all bus tenders issued by the Gauteng Provincial Government on grounds that included the two-decade-old TA's stipulation that Putco and other incumbent bus operators would have right of first refusal over any future bus contracts (*PUTCO (Pty) Limited v MEC*, 2022).

In the mid-2000s, however, it was not to be known how far the can was yet to be kicked—that the temporary, at the time merely legally dubious settlement would persist for two decades or more. However already in 2003 the City of Johannesburg, planning the major reforms around the SPTN, was clear that

> The highest priority is to interact with Gautrans [the Gauteng Department of Roads and Transport] on the proposed rationalisation of the Putco Soweto interim contract and the Eldorado Park competitive contracts before the designs [of the SPTN] are completed and they are put out to tender (City of Johannesburg, 2003a, p. 438).

The problem of Putco was being considered more widely. In 2004/05, Metrobus reported that

> the introduction of new [Metrobus] routes namely, Sandton, Midrand, Fourways, Sunninghill, et cetera was challenged by Putco Limited. Putco has always enjoyed a monopoly in the Townships as a result of the Old Apartheid policies that separated people on racial lines. This meant that people were prevented from exercising their freedom of choice and were compelled to use Putco buses which were not and still are not suitable for passenger transportation.
>
> Metrobus is planning to offer reliable and affordable services to the Townships, particularly Soweto. This will dilute Putco's Monopoly and offer people in Soweto a freedom to choose services that suit their needs. This will be a significant move for the company but for Gauteng as a whole. For the first time in history, the Municipal bus service will be introduced in the black townships. (Metrobus, 2005, p. 3).

In the historical moment before Rea Vaya, therefore, we can name some immediate similarities between Putco and the minibus taxi industry. Both were major incumbents in Gauteng's transport system, responsible for the transportation of large shares of urban residents. Both were products of explicit policy decisions by the apartheid state, and each had come to play an integral role in the urban spatial economy of apartheid. Each was regarded in the immediate post-apartheid era as representing a policy problem of high priority, and the respective reforms have been largely abortive. Crucially, too, they both existed in states outside of the law, resulting from a combination of historical under-regulation and under-enforcement, their respective ambiguous, parastatal roles, government capitulation to pragmatic short-termism, and, to be discussed further shortly, aggressive legal and negotiation tactics.

5.2. Playing for the big prize: Rea Vaya

Informality and the distribution of the sensible

In keeping with the SPTN, which was predicated on integrated all extant transport along its routes, Rea Vaya was always to incorporate the incumbent operators. Initial overtures to Metrobus and Putco culminated in a Memorandum of Understanding agreeing to seek their participation, on some terms, in Phase 1.[143] The original high-level concept was for the taxi industry and Putco to jointly operate Bus Operating Companies, so that Putco's skills and culture would assist in the formalisation of the taxi operators.[144]

This met with firm resistance from Putco, on grounds of both principle and quantum. Regarding the quantum: according to Putco's CEO in an August 2008 consultation, the company "could not entertain a CoJ imposed model for apportionment of [Joint Venture] company shareholding which was tied to market share split between bus and taxi […] such an approach would unfairly penalise the bus industry given that their market share had been adversely affected for many

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[143] File 11_11, "Memorandum of Understanding for the Development of a Consultative and Engagement Framework with the Bus Industry in the Process of Planning, Design and Implementation of Phase 1 of the Rea Vaya Bus Rapid Transit system in Johannesburg, 16 July 2008.

[144] Metrobus was to originally to be included too but was later dropped from the plan.

years by the unregulated growth in the taxi industry."[145] Here we see Putco making the explicit argument that the taxi industry is informal, and therefore its incumbency (measured as market share) is illegitimate. Putco, in contrast, is entitled not only to its incumbency but in fact a *greater* relative measure of benefit from the new dispensation: "if no adjustment was made for the historical situation the bus industry would be unfairly penalised".[146] Putco proposed a flat 50/50 split between itself and the collective taxi industry.[147] The actual market share split between the various incumbent operators will be shown below to be a difficult and contested question, but Putco's was perhaps 25% on some routes and less on others.

In these discussions we see Putco mobilising claims of formality and informality, not based on any criteria of compliance with the law or regulatory status, but rather on ostensible self-evidence. The gap between this common sense distinction between the taxis and Putco, and the lack of clear legal distinction between them, demands consideration of what informality means or should mean with respect to them. The informal taxis have permits/operating licenses but exist largely outside of the law with respect to enforcement, labour practices, and myriad licensing and driving regulations. Formal Putco operates unroadworthy buses, on licenses that were last legal and constitutional in the mid-1990s, and collect subsidies that have now been confirmed to have been illegal for decades.

A typical definition of informality is some version of Lindell's "common sense notion" of "economic activities that lie beyond or circumvent state regulation" (2010b, p. 5). This however evades the conceptual debate or closes it prematurely (Castells and Portes, 1989). Roy (2005) points out that informality is not a category that exists independent of the state, whose legitimacy rests in part on using its power to draw distinctions such as formal/informal. Indeed the state is integral even in creating situations of informality in the simple definition: Harris-White describes laws in India designed to exclude whole swathes of the economy from formal regulation, to be regulated only "by norms of caste, locality, and gender, controlled through the private rules of business associations" (2020, p. 39). In the same vein the previous chapter showed that the pre-eminent archetype of the informal economy in South Africa was a deliberate

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[145] File 39_21, Operator Business Model consultation, 6 August 2008.

[146] File 39_21, Operator Business Model consultation, 6 August 2008.

[147] File 39_23, "Notes of meeting held on 16 July 2008 with Bus Operators", 16 July 2008.

creation of the state, for whom its very "informality" was a useful work-around to the gap between what it needed and what it, and the existing private sector, was willing to provide. To uncritically call a sector "informal" because it is unregulated can be to miss or obscure its creation by the state to lie outside regulation. This also suggests a (partial) reversal of the proposition that informality is produced (or allowed to persist) by state ineffectiveness (Goodfellow, 2020b). It can in fact be the result of "effective" state-driven informalisation and itself *produce* ineffectiveness in a state that subsequently struggles to control it.

Furthermore any definition of informal defined by relationship to the state and to law is significantly muddied by the fact that the two are not the same: states, as we have already seen with respect to Putco, act outside the law in ways and to degrees that vary widely over time and with respect to the latest court ruling on any given question. The field of public law exists to manage the difficult and inconsistent relationship between the state and the law, both of which shift constantly in form and are rarely consistent or coherent even within themselves, much less with respect to one another.

I propose here an alternative approach to the formal/informal distinction, at the very least with respect to these bus operators. The distinction here primarily reflects not social facts, produced by the state or no, but aesthetic judgements. Ghertner (2015) and Gastrow (2020) both show that informality in housing, in Delhi and Luanda respectively, does not in practice describe a dwelling in violation of the law. Rather, it describes a dwelling in violation of prevailing aspirational aesthetics: of the middle class in Luanda, and of the "world class city" in Delhi. This resembles Ranciere (2007), for whom aesthetics contributes to the "distribution of the sensible", the arrangement of the world into just such "common sense" categories of inclusion and exclusion (cf. Lindell, 2010b).

We see just such an attempt to distribute the sensible in these negotiations. Putco's complaints about the illegitimacy of the taxi industry's market share, resulting as it did from "unregulated" growth, rested on a distinction between the lack of regulation of the taxis and the lack of regulation of Putco itself. This distinction is not a legal one: both operate largely outside of the relevant laws and regulations, whose thinness and lack of enforcement are similarly the result of policy and political decisions. Rather the distinction Putco drew in these negotiations rested on a fundamentally aesthetic difference between itself and the minibus taxis. Putco operated conventional buses rather than minibuses, which have distinct normative associations in South

Africa. Putco was constituted as a company and run by wealthy businesspeople; the minibus taxi industry was constituted as "associations" and run—at least apparently—by people not typically considered rich. And fundamentally Putco's ownership, management, and apartheid legacy were all lily-white; whereas the minibus taxi industry is black African in ownership and aesthetic associations.

Putco did not get far with their specific argument here, but that is not the only way we see the aesthetic formal/informal distinction mobilised with respect to Rea Vaya. The state's conception of Putco as formal and the minibus taxis as informal led it, for example, to insist on them jointly owning and managing the Phase 1B Bus Operating Company so Putco could help in the formalisation of the taxis—as if Putco was any example of regulatory and legal compliance, or indeed cooperative relations with the state. It also led to the state's inability to resist the taxi industry's demands or consider leaving it out: the informal minibus taxis were an object of development (Mitchell, 2002). That is to say developing them, as it were, by both formalising and benefiting them was a large part of the point of the whole exercise, and as such could be and was traded off against the financial sustainability and indeed even the transport objectives of the whole project.

Logics of development and incumbency

Putco had other objections to the City's proposals. Regarding partnering with the taxi industry, "[Bus] Operators were of the opinion that partnerships between operators should not be forced and that contracts could be apportioned in such a way that might not necessarily involve bus and taxi joint ventures."[148] Putco flatly refused to go into business with the taxi industry, and also refused to split trunk and feeder routes into different contracts for apportionment between the operators: "Unequal treatment between modes - totally unacceptable."[149] Instead, Putco proposed that the operating contracts for Rea Vaya be split into equal sets of trips on each route and assigned to different Bus Operating Companies: see Figure 23 for Putco's own graphic
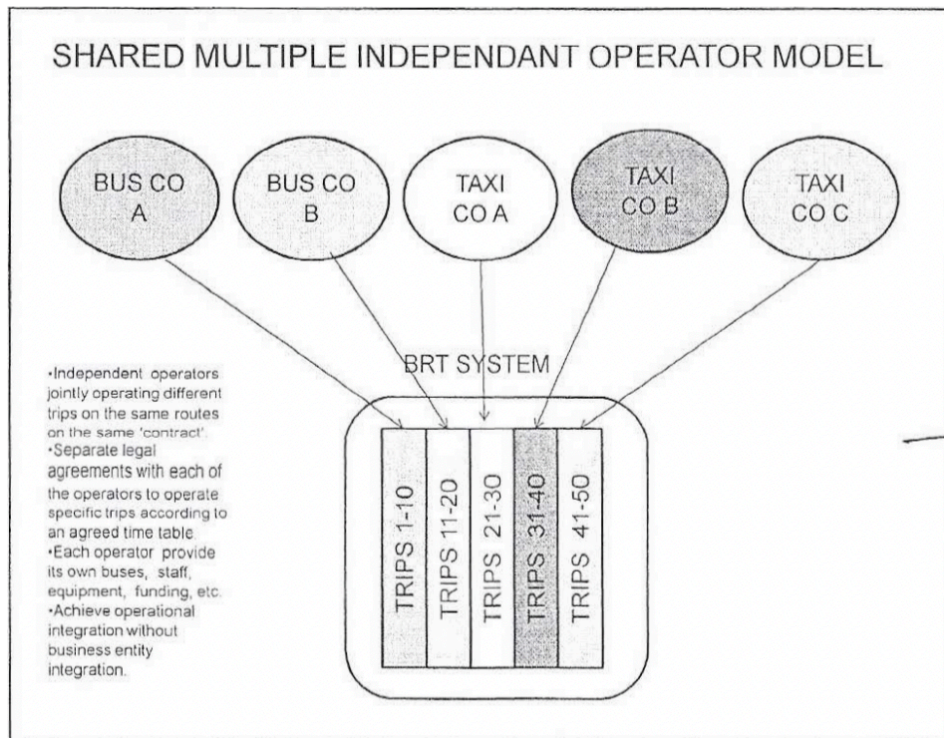
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[148] File 39_23, "Notes of meeting held on 16 July 2008 with Bus Operators", 16 July 2008.

[149] File 39_19, Rea Vaya Operator Business Models – Putco Comments and Proposals, 29 August 2008.

representation. It claimed this would achieve "operational integration without business entity integration".[150]

The Rea Vaya team still imagined, at this stage, something like a competitive negotiation for the prize of running the Bus Operating Company. "Mr Stanway made it clear that the CoJ would not disclose its position on the rate per kilometre, as this would hamper its ability to negotiate. The bus operating companies would, therefore, be required to put forward their financial offer."[151]

Figure 23: Putco's proposal to split each Rea Vaya route between distinct operators, 2008.[152]

The City pushed back against the substance of Putco's objections: it insisted that there would be one and only one BOC per phase of Rea Vaya, for reasons of efficiency, avoidance of operational complexity, and skills transfer from bus companies to taxi operators.[153] The City's rebuttals also included what might be read as a partial repudiation of the formal/informal distinction upon

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[150] File 39_19, Rea Vaya Operator Business Models – Putco Comments and Proposals, 29 August 2008.

[151] File 39_23, "Notes of meeting held on 16 July 2008 with Bus Operators", 16 July 2008.

[152] File 39_19, Rea Vaya Operator Business Models – Putco Comments and Proposals, 29 August 2008.

[153] Digital file, "Draft Response to Putco", 15 February 2009.

which Putco insisted: according to the City, Putco's proposal "fails to conform to the political mandate which favours partnerships between bus and taxi operators and the breakdown of the historical separation of the modes inherent in the old subsidy system."[154]

There emerged a key disagreement as to the process the negotiations must follow. Early in 2009 the Rea Vaya team established, based on data provided by Putco, that Putco's services would be minimally affected by Phase 1A of Rea Vaya, at least according to the City's criteria for affectedness: "it must have the same origin and destination as a BRT route, and must share the same routeing (majority of route uses the same roads)."[155] A route determined to be "affected" would count towards its operator's inclusion in the relevant phase of Rea Vaya, and would be withdrawn from service so as not to compete with the new system. Based on these criteria, even the eight Putco services that ran from Soweto to the Johannesburg CBD failed the test, for want of common origins, destinations, routes, or combinations thereof.

That same internal note expressed a concern produced by the historically loose permitting system:

> Putco Soweto changes its services at the drop of a hat. The Interim Contract gives it maximum flexibility, and it probably has loads of permits with a very broad authority (of a Soweto – Johannesburg nature). It could activate some permits and begin operating a strong service on the Phase 1A BRT routes. It could say that its market share should be judged on this basis.[156]

However this does not seem to be a tactic that Putco deployed. Instead Putco objected to the affectedness criteria, arguing that "even if a BRT route uses a completely different corridor it could take passengers away where it serves the same origin and destination."[157] On the matter of process, Putco insisted that affectedness be determined for the whole of Phase 1 from the start, and thus-determined participation shares apply to each sub-phase:

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[154] Digital file, "Draft Response to Putco", 15 February 2009.

[155] Digital file, "Putco impact in Phase 1A", 15 February 2009.

[156] Digital file, "Putco impact in Phase 1A", 15 February 2009

[157] Digital file, "Note on route restructuring meeting with Putco", 12 February 2009

even if the impact on them in Phase 1A was very small, they wanted to be included anyway, because if it was a taxi-only Phase 1A, the taxi industry would keep Putco out of Phase 1B. Unless Putco was in at the start, it ran the risk of being cut out altogether or marinalised.

Further, their view is that even though they are not directly affected in Phase 1A (they have only two or three trips serving Soweto to CBD on the current timetable), there will be an indirect impact on them, e.g. someone may catch the BRT to the CBD and then use a taxi to go to Kramerville or Sandton, instead of using the Putco service all the way. They have 55 peak trips that use the Soweto Highway and go via the CBD on their way to Sandton, Rivonia, etc.

They feel strongly about being a "major roleplayer" in all the phases. This is because they are the only major bus operator in Soweto and the BRT will impact them greatly one way or another, even from Phase 1A.[158]

To which Rea Vaya's representative in that meeting responded:

I said that the City's position on participation remained the market-share principle. I said that if it alters that, then it leaves itself wide open to unresolvable demands from non-affected operators to participate. I assured them that Phase 1A was scaled down to make it more manageable, not to cut anyone out. I said that their take on the number of routes affected (about 60% of all trips) seemed exaggerated, because we could not just eliminate routes that might be indirectly affected – passengers would be left stranded.[159]

This disagreement between Putco and the City was more than just jockeying for advantage in a negotiation. After this exchange the City summarily dismissed Putco's involvement in Phase 1A entirely on the contested affectedness criteria. Putco did its best to reserve its claimed rights: in the planning for 1B, it was still insisting that the dispute over participation in 1A was open.[160]

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[158] Digital file, "Note on route restructuring meeting with Putco", 12 February 2009

[159] Digital file, "Note on route restructuring meeting with Putco", 12 February 2009.

[160] File 29_23, "Putco comments and views on the Rea Vaya Phase 1B Planning Discussion Document", 27 September 2010.

However the prospect of benefiting from Phase 1B (and subsequent phases) seemingly kept the company from pressing the issue overly.

Instead, this was a tussle over who would control the timing, agenda, and process of negotiation: exactly as the minibus taxis did with respect to Phase 1A. To this end we see the City and Putco mobilising competing logics. The City's was one that might be called developmental: there was a policy objective, a plan for realising it, and success would be measured by what would best deliver that goal or approximate that plan. This is visible in the previous quote, where the City's concern was, understandably, the knock-on outcomes of conceding Putco's point, both in its negotiations with other operators and on the proposed beneficiaries of the project: "it leaves itself wide open to unresolvable demands from non-affected operators to participate... passengers would be left stranded".[161] This logic is basically utilitarian in its outlines, "prospective, forward-looking, gazing towards the achievement of as yet unrealized states" (Crush, 1995, p. 8).

Putco, in contrast, was advancing a much simpler logic of incumbency, articulated in terms of rights and entitlements. The logic of incumbency is much more deontological and backwards-looking: what matters is not the outcomes of this or that position in a negotiation, but the letter and spirit of the prior claims of all parties of which an incumbent is naturally protective. In a presentation by Putco in February 2009, the company made a numbered series of these claims to incumbency, with varying degrees of explicitness. The starkest, however, was its closing argument, which puts the logic of incumbency in about as few words as possible:

- Putco is currently the only bus operator entitled (by its interim contract) to transport passengers from and to Soweto. [...]
- The BRT will impact on this right as the BRT will result in bus services running to, from and inside Soweto.
- Putco is therefore affected by phase IA.[162]

Nevertheless, as the operational planning of Phase 1A proceeded, Putco was side-lined over the company's protests: "[the BRT management team] have been approached by PUTCO, advising

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[161] Digital file, "Note on route restructuring meeting with Putco", 12 February 2009.

[162] File 39_04, "Issues in respect of Phase 1A of Rea Vaya", 2 February 2009.

that they were not happy and that they are being 'over taken' by the taxi industry."[163] Putco threatened legal action and continued to reserve their rights well after operations began. As late as November 2010, over a year after Phase 1A beginning operations, the company was insisting in the Phase 1B negotiations that "it remains adamant it should be included in Phase 1A and is contemplating legal action to secure its participation in Phase 1A".[164] This legal action was never launched.[165] Without speculating as to why not, we can note that the affectedness criteria established by the City in planning Phase 1A would seem to have made Putco's participation in 1B a matter of course, leaving the company with skin in the game, as it were. A later legal brief by the City noted that:

> Putco has […] indicated that it nevertheless expects to be included in the Phase 1B negotiations. This claim may in part be based on a potential legitimate expectation to be included in such negotiations having been created by the City's undertaking to engage Putco in the Phase 1B Negotiations. In addition, a memorandum of understanding was entered into amongst the City, Putco and Johannesburg Metropolitan Bus Services [Metrobus].[166]

Although it began as a more ambitious plan, running all the way from Soweto in the south-west to Sandton in the north, in October 2010 Phase 1B was revised to two parallel trunk routes from Soweto to Parktown and Braamfontein respectively[167]. This would include 18 new kilometres of dedicated busway, 16 new stations, and 134 new buses of which 41 would be articulated[168]

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[163] File 06_03, "Minutes of Rea Vaya BRT (Bus Rapid Transit) Management Team (BMT) meeting", 27 February 2009.

[164] File 29_16, Comments on 1B planning by External Advisory Committee [presentation], 23 November 2010.

[165] Putco did later take legal action on a number of other issues, including suing unsuccessfully in 2021 to prevent the operation of Phase 1C over the City's determination of its level of affectedness (*PUTCO (Pty) Limited v City of Johannesburg*, 2021).

[166] File 32_15, "Rea Vaya Bus Rapid Transit System: Affected Operators In Respect Of Phase 1B" (legal brief), 24 February 2011.

[167] File 32_15, "Rea Vaya Bus Rapid Transit System: Affected Operators In Respect Of Phase 1B" (legal brief), 24 February 2011.

[168] Or as they are called in London, "bendy".

trunk buses and 93 would be smaller complementary buses. Total ridership was anticipated to increase to 160 000 passenger trips per weekday, and annual bus-kilometres to 12 million.[169]

As the Rea Vaya team's attention turned to Phase 1B in earnest from mid-2010, it launched a "seat allocation working group", referring to the number of seats on existing buses that would be withdrawn from service and allocated to their original operator on Rea Vaya Phase 1B. At first under the revised routing the City determined that Putco's affectedness was once again limited:

> Putco has an Interim contract for services between Soweto and various CoJ destinations. The impact on Putco (January 2009 timetables) would appear to involve only 4 buses directly affected, and 80 buses on routes that are partially affected, chiefly the services from Soweto to Sandton/Rivonia/Sunninghill along T2 [the trunk route planned for Phase 1B], and the services from Soweto along T2 then via Beyers Naude Drive to Fairlands etc. However, the Rea Vaya route goes only up to Parktown, and so passengers may be unlikely to use Rea Vaya to Parktown and to transfer to Putco for the Parktown-Sandton section.[170]

This limited affectedness was largely the result of Johannesburg's reorientation northwards away from the CBD and towards the rising commercial district of Sandton, and Putco's following of that demand to focus on Soweto-Sandton links under its blanket permit (Mabin, 2014; see also the Putco Soweto route map in Figure 22). These links "bypass[ed] the Johannesburg CBD via either the M1 North or via Empire Road.",[171] leaving the CBD largely to Metrobus, Metrorail, and the taxis.

The CBD remained (and remains) a key transit hub, and while an explicit intention of Rea Vaya was to offer functionally direct routes from Soweto to Sandton, its dependence on transfers in the CBD (and intention to reinforce the CBD's centrality) is visible in the full Phase 1 route map in Figure 24.

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[169] Digital file, "Terms of Reference for Technical Support to Phase1 B Potentially Affected Operators for the Seat Allocation Process for Phase 1B", 11 May 2011.

[170] File 29_28, "Rea Vaya BRT Phase 1B Planning: Discussion Document", c. July 2010.

[171] File 17_01, "Greater Johannesburg Metropolitan Council Bus Rationalisation Assessment", 25 April 2000.

Whereas Phase 1B was initially planned to run all the way to Sandton, the October 2010 revision left it terminating in the CBD.[172] This meant that, by the City's initial affectedness criteria which focused on origins and destinations, Putco's many routes that extended further north than Rea Vaya's early phases were considered non-affected.

Putco was displeased:

> How did the CoJ arrive at the conclusion that only 4 Putco buses are directly affected and 80 indirectly affected? Given the vague and ambiguous wording of the classification contained in the Phase 1B discussion document is totally unclear how the CoJ arrived at [that] conclusion […] Depending on how one defines and formulates the criteria or rules to be applied when deciding which of the existing routes will be affected, Putco trips affected can range anything between 0 and 1,053 per day.[173]

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[172] File 32_17, Phase 1B information workshops with potentially affected operators, 11 August 2011.

[173] File 29_23, Putco comments and views on the Rea Vaya Phase 1B Planning Discussion Document, 27 September 2010
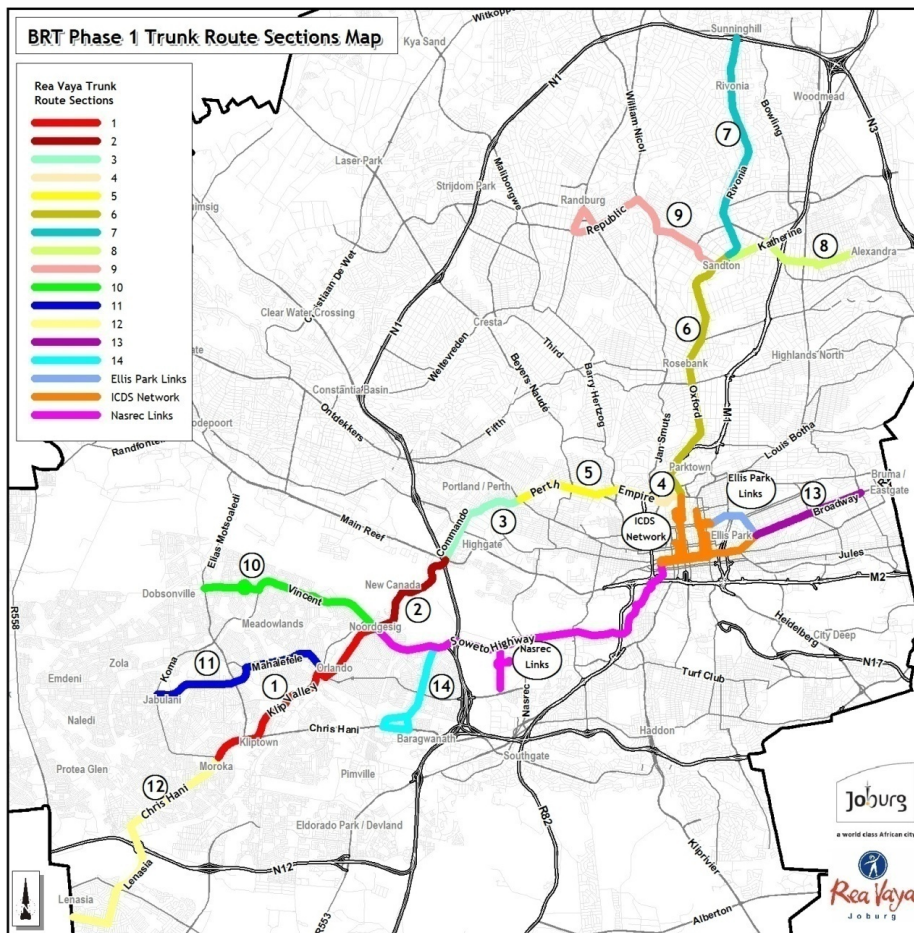
Figure 24: Rea Vaya Phase 1 trunk route map[174]

Putco demanded an objective measure to settle the question of affectedness, and was clear that it reserved what it considered to be its rights in the matter:

> Some existing operators have acquired certain rights (e.g. right of first refusal) in their existing interim (and some tendered) contracts. The notion of simply withdrawing permits and then proceeding to tender should be approached with caution, as interim contract holders will enforce and protect their legal rights should these be violated.

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[174] Digital file, Overview of Phase 1A and Phase 1 costs and projected budget requirements, September 2011; ICDS stands for Inner City Distribution System, which covers the CBD

The bus industry has protected the right of first refusal strongly and will continue to do so. This right will be enforced in any tender scenario.[175]

Around this time the City noted in an "environmental scan", in the sense of operating environment, that "Putco is increasingly impatient to participate in the Rea Vaya BRT and remains unhappy about the fact that it was not included in Phase 1A."[176]

In early 2011 the City undertook to determine whether it legally had to respect Putco's claims to incumbency, likely in response to Putco's boycott of a December 2010 meeting and its briefing lawyers. In a brief soliciting a legal opinion, lawyers for the City wrote:

Due to:

2.6.1   the reduced impact on Putco [due to the October 2010 route revision];

2.6.2   the fact that one of the rationales for the implementation of the Rea Vaya is to replace mini-bus taxis with buses, thereby reducing traffic congestion (as opposed to replacing existing buses with new buses, which would not reduce traffic congestion); and

2.6.3   the emphasis on the need for reform of the taxi industry and empowerment of previously disadvantaged transport operators in the planning of Rea Vaya,

the City would like to assess:

2.6.4   whether it is obliged to involve Putco in Phase 1B or not; and

2.6.5   what rights, if any, Putco has in this regard.[177]

Here, again, we can see the two logics of development and incumbency in direct opposition. The City is advancing developmental claims on the basis that it was seeking to a) reduce congestion,

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[175] File 29_23, Putco comments and views on the Rea Vaya Phase 1B Planning Discussion Document, 27 September 2010

[176] File 29_20, Rea Vaya BRT Phase 1B Planning Recommendations, 1 October 2010.

[177] File 32_15, "Rea Vaya Bus Rapid Transit System: Affected Operators In Respect Of Phase 1B (legal brief)", 24 February 2011.

b) reform the taxi industry. Putco is claiming a legal right to incumbency. In this legal brief, the City also applies itself to the various options for dealing with such a claim:

> If Putco does have a right to be included in the negotiations for Phase 1B, what consequences, if any, could the City face if the City were to elect to:

4.2.1   exclude Putco from the negotiations for Phase 1B; or

4.2.2   compensate Putco […] instead of including it in the negotiations for Phase 1B; or

4.2.3   engage with Gautrans [the Gauteng Department of Roads and Transport] with a view to allowing Putco's interim contract to run its course […] or

4.2.4   engage with Gautrans with a view to procuring that Gautrans give Putco formal written notice of termination of the interim agreement in respect of the routes operated by Putco that are affected by Phase 1B?[178]

Here the City explicitly recognises the buyout (compensate) option that it appeared never to contemplate in relation to the taxi industry. Indeed the City never appeared to consider any model but having the minibus taxi operating Rea Vaya Phase 1A (and participating in 1B); the taxis were treated (as discussed in the previous chapter) as objects and beneficiaries of develop-ment policy, rather than intransigent incumbent opponents.

In response to this brief the City received legal advice that the City was most likely not obliged by law to negotiate with Putco, but that doing so and ultimately involving Putco in Phase 1B would be the "safest route" given legal uncertainty. This was however not on the strength of Putco's existing interim contract, which was "at this stage, a Gautrans problem."[179] Later legal advice, taking as a *fait accompli* the (by then) extensive negotiations with Putco, is clear that

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[178] File 32_15, Rea Vaya Bus Rapid Transit System: Affected Operators In Respect Of Phase 1B (legal brief), 24 February 2011.

[179] Digital File, "In re Rea Vaya Bus Rapid Transit System: Affected Operators In Phase 1B" [Legal opin-ion], 16 March 2011.

where the parties cannot agree on a substantive issue in regard to the negotiated contract, the matter is left to the usual tactics and strategies of negotiation […] The ultimate power play in the negotiation is the offer to all operators that is published and that is either either accepted or rejected by Putco, and in the absence of acceptance, the continuation by the City to conclude the negotiated contract with the other [Potentially Affected Operators]. […] The only statutory right that Putco attains through the NLTA [National Land Transport Act] is to participate in in the negotiation of the negotiated contract.[180]

Thus from March 2012 at the latest the City was operating on advice that regardless of Putco's presumptive claim to incumbency the City was not obliged to include Putco in Phase 1B at any cost. This legal opinion, in its detail, also puts incumbency claims in implicit opposition to a developmental logic. As far as the law is concerned, neither historical nor contractual claims to incumbency can prevent a municipality (or the state more broadly) from exercising a logic of development:

the City is not permitted to fetter itself in terms of contract so as to disable itself from exercising the discretion required by law. Its paramount duty is to preserve its own freedom to decide in every case as public interest requires.[181]

What is not in question is that the City undertook extensive consultations, "talks about talks", "pre-negotiations", and then formal negotiations with Putco over the period 2011-12. The next section discusses the question that came to dominate these negotiations—the seat allocation process—and the City's attempts to keep the negotiations on a technical terrain, subject to method and reason, rather than the raw force of incumbency that had dominated the negotiations for Phase 1A.

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[180] Digital file, Putco Limited ("Putco")/ City of Johannesburg Metropolitan Municipality ("City"): Litigation Issues as to the Seat Allocation Process", 19 March 2012.

[181] Digital file, Putco Limited ("Putco")/ City of Johannesburg Metropolitan Municipality ("City"): Litigation Issues as to the Seat Allocation Process", 19 March 2012

Channelling the political into the technical

Dealing as it did with questions of how claims should be distributed amongst various interests, the seat allocation question was fundamentally political. This section will show that following its experience with the negotiations over Phase 1A the Rea Vaya team undertook to canalise this *political* question into a *technical* process. This disciplined the negotiations to some extent, preventing the runaway seen in 1A. However it required conceding the basic question of incumbency to Putco and ultimately failed to keep the process proceeding on track.

Following the November 2010 discussions discussed above, the City had set down its proposed timeline for the talks to come. This document referred to the November discussions as "talks about talks". Still to come included:

- "Talks about Talks Process Committee and Working Groups". This would run from January to March 2011, and focus on winnowing "Potentially Affected Parties" down to "Affected Parties"; determining their respective shares of the 7 500 seats the City intended to remove from affected routes; technical support to build their capacity for participating in the negotiations to come; and joint appointment of facilitators for the negotiations.
- "Pre negotiations", in April 2011. These would be confined to agreeing a negotiations framework comprising process issues, and further technical support.
- "Negotiations", from April to July 2011, which would be freed by the preceding process to focus only on the terms of the contract for the Bus Operating Company.[182]

This would, it was proposed, be concluded in good time for the bus procurement to be finalised and funding in place by December 2011, and the BOC fully operational by April 2012. The City explained its rationale behind its approach to negotiating the BOC contract in a separate, presumably internal, negotiations plan, which was conscious about learning the lessons of 1A:

> Based on its experience in Rea Vaya negotiations in Phase 1A, the City requires
> that the Phase 1B negotiation process be "contained", meaning:

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[182] Digital file, "Proposed Timeline Document for Talks About Talks Process and Subsequent Negotiations for a Rea Vaya Phase 1B Bus Operating Contract", File dated 17 January 2011.

- Structured

- Not open-ended

- Clear rules and process

- Clarity provided to all participants about content of process prior to their choosing to participate.[183]

None of these characteristics could be said to have applied to the Phase 1A negotiations. In its reflections on that prior process the City repeatedly described the indeterminacy of the negotiations as a direct cause of the difficulty and expense of the exercise. As a later mayoral report noted, proposing a formal contracting policy:

the City had to budget for and direct considerable resources towards achieving transformation and also to set up a strong bus operating company. These expenses were referred to as transformational and transitional costs.

"The transformation and transitional costs that were expended in phase 1A were, for a variety of reasons, dealt with on ad hoc basis. The chief reason was that such a transformational exercise had not been done in South Africa, and with the Rea Vaya concept being new, it was uncertain exactly how the operator participation model would unfold. This resulted in the City team having to approach Mayoral Committee on several occasions to obtain approvals for various aspects of the participation model piecemeal. In addition to being time-consuming, this approach also resulted in their being some uncertainty as to what the City's policies were in respect of the participation model being developed, and also sometimes led to unreasonable expectations on the side of the operators as to how they should participate and the extent of the support that the City could provide to them in implementing the participation model. (sic)[184]

The City, therefore, set out to specify as far as possible the parameters of the eventual Phase 1B negotiation before that negotiation started, in the spirit of consultation. As the external

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[183] Digital file, "Phase 1B Negotiations Plan", 11 June 2011 [The document is undated, but the digital file was created on this date].

[184] Digital file, "Rea Vaya: Bus Operating Company Contracting Policy: Mayoral Report", 1 February 2012.

facilitators would later write, "A party consults in order to enrich a proposition and to enhance the prospect of its acceptance, but retains the right to determine the outcome. A party negotiates with a view to reaching agreement."[185] For its part, Putco had already expressed a fervent demand for a "decision-making tool" in the form of a "mutually agreed and clearly defined set of criteria" to determine its and the taxi industry's relative affectedness by the proposed 1B routes.[186]

Here Putco was insisting on what I am referring to as a technical, as opposed to political, process. That is to say, one that (ostensibly) starts from objective premises and proceeds through a neutral analysis to derive incontrovertible conclusions. Such a technical process here would, one presumes, accept the status quo of Johannesburg road transport as an input and produce as an output a "fair" shareholding in the Phase 1B bus operating company. Of course the hidden premises include that the status quo of road transport is the (only) relevant input, that fairness is amenable to objective analysis, and even more implicitly that the resulting proposal would enjoy general or at least widespread support among the stakeholders.

What Putco obtained for its demands was the seat allocation process. This began with a methodology proposed by the City at a meeting on 23 March 2011 to solicit comments for adjustment ahead of the working group being convened from 1 June. Despite being "broadly supported"[187] the methodology was revised, presented, and commented on in April and again in July 2011, and a consolidated version presented in September.

The City's methodology, as presented and revised between March and September 2011, was built around measuring "affectedness" of any given "Potentially Affected Route" (PAR). The affectedness of a route was proposed to be defined as the degree to which riding on that route would be substitutable with the proposed routes for Phase 1B of Rea Vaya. Routes thus found to be affected would have seats (viz. passenger capacity of vehicles) withdrawn on a sliding scale

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[185] Digital file, "Sufficient Consensus: an explanation and way forward for the parties to the BRT Talks About Talks", 30 November 2011.

[186] File 29_23, "Putco comments and views on the Rea Vaya Phase 1B Planning Discussion Document", 27 September 2010.

[187] Digital file, "Terms of Reference for the Facilitation of the Seat Allocation Working Group of the Rea Vaya BRT Phase 1B Talks-About-Talks" [Draft], 23 May 2011.

to make way for the planned 7 500 seats on the new BRT route, on the principle of "maintaining a balance between supply and demand".[188] Operators would be compensated with shareholding in the BRT company, and therefore ownership of the newly-introduced seats, in proportion to the seats they had surrendered.[189]

After these multiple revisions the three criteria the City proposed to measure affectedness were coverage, convenience, and cost. These three criteria were weighted equally, contributing 33.3 points each out of a possible 100. The higher the score, the more suitable the route for substitution in whole or part with Rea Vaya Phase 1B. "Coverage" broke down further into three sub-criteria: whether the route's origin was served by the proposed Rea Vaya routes, whether its destination was, and the degree of overlap between the route and Phase 1B. "Convenience" measured how many transfers on Rea Vaya and complementary services would be needed to substitute for the Potentially Affected Route. "Cost" simply measured the comparative cost to riders between the existing route and the equivalent Rea Vaya route. Table 9 summarises the measurement and scoring of these criteria and Table 10 shows the outcome of the range of possible scores.

The methodology as presented had incorporated numerous inputs from the Seat Allocation Working group. Cost had been inserted at the suggestion of Top Six taxi association at the March 2011 consultation. Overlap was the suggestion of Putco and supported by Top Six, as "many […] routes load passengers along the way, making the origin point 'almost incidental'"[190] Other amendments based on Working Group comments included the partial seat reductions as portrayed in Table 10.

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[188] Digital file, "City Of Johannesburg Transportation Department Conclusions and Recommendations on Phase 1B Relative Degree of Impact on Existing Operators and Resulting Seat Allocation", 10 April 2012.

[189] Maintaining a balance between supply and demand is a strange notion, since one might think that the purpose of a major transport project was to increase supply of transport on its routes and in the city as a whole. Regardless this stood, seemingly without being questioned, as a key premise of the seat allocation process.

[190] File 32_08, "Rea Vaya Approach and Methodology for Determining Affected Operators and Routes in Phase 1B: Notes showing response to comments from seat allaction [sic] WG members", 26 October 2011.

Despite this version of the methodology being labelled "for final approval", and the "broad support" the methodology had received (as mentioned) from the first version, two weeks later Putco returned with an extensive submission of its own.[191] This submission took issue with almost every part of the methodology and some additional matters besides. These objections were too numerous and granular to deal with comprehensively here, but what follows are three that each illustrate a somewhat distinct dynamic of the technicised negotiations.

Having forced the negotiations into a technical idiom this was the language to which Putco resorted for most of its objections. For example with reference to the City's scale for measuring route overlap, a sub-criterion for coverage, Putco scorned the approach for not complying with "accepted scientific principles" and using unequal measurement intervals as "an elementary error in terms of design of such interval scales".[192] See Figure 25 below for Putco's four slides making the argument, verbally and graphically, that the route overlap scale should use strictly equal intervals.

Similarly Putco took issue with the structure of the criteria, sub-criteria, and their respective weights in scoring. In the City's September proposal coverage had the same total weight of the other two criteria. Of the total weighting for coverage, origin and destination were each worth 25% while route overlap was worth 50%. Putco's claim essentially was that this minimised the value of origin and destination, in particular; as did the grouping of supposedly "independent" criteria as origin and destination of route. See Figure 26 for the full argument. They preferred to have origin, destination, and route overlap be separate criteria weighted equally for cost and convenience. This is because "Criteria should only be weighted differently if:- It can be shown (objectively and scientifically) that the one criterion is more important than the other."[193]

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[191] Digital file, "Seat Allocation Methodology: Putco comments & proposals", 28 September 2011.

[192] Digital file, "Seat Allocation Methodology: Putco comments & proposals", 28 September 2011.

[193] Digital file, "Seat Allocation Methodology: Putco comments & proposals", 28 September 2011.

Table 9: Summary of scoring rubric for Potentially Affected Routes, September 2011 proposal. "PAR" = potentially affected route; RV = Rea Vaya.[194]

Criterion	Questions	Answers	Guidelines	Points
Coverage? (Total of 33.3 points)	Origin?	Yes/walkable		8.3 out of 8.3
		No		0 out of 8.3
	Destination?	Yes/walkable		8.3 out of 8.3
		No		0 out of 8.3
	Route Overlap?	> 90%		16.6 out of 16.6
		50 - 90%		8.3 out of 16.6
		<50%		0 out of 16.6
Convenience? (Total of 33.3 points)		Excellent/VG	(1 or 2 Rea Vaya trip segments)	33.3 out of 33.3
		Not so convenient	(3 Rea Vaya trip segments, 1 Bus/Taxi plus 1RV, long walk plus 2 RV, 2RV but route is much less direct)	16.6 out of 33.3
		Very poor	(1 Bus/Taxi plus 2 or more RV, 2 Bus/Taxi plus 1 RV, long walk plus 3 RV	0 out of 33.3
Cost? (Total of 33.3 points)	Does the Rea Vaya alternative cost the same or less?	Rea Vaya fare same/cheaper	Compare the fare for the full PAR route with the fare or sum of fares for the Rea Vaya alternative	33.3 out of 33.3
	Does Rea Vaya alternative cost more but not more than 10% more?	Rea Vaya fare up to 10% more	Compare the fare for the full PAR route with the fare or sum of fares for the Rea Vaya alternative	16.6 out of 33.3
	Does Rea Vaya alternative cost more than 10% more?	Rea Vaya fare more than 10% more	Compare the fare for the full PAR route with the fare or sum of fares for the Rea Vaya alternative	0 out of 33.3
			Total	**Score out of 100**

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[194] Digital file, "Rea Vaya approach and methodology for determining affected operators and routes in Phase 1B: for final approval", 14 September 2011.

Table 10: Policy outcomes based on route scores, September 2011 proposal.[195]

Possible Route Scores	Category	Approach
8.3	<50	Existing route must continue to operate unchanged
16.6		
24.9		
33.2		
41.5		
49.8		
58.1	≥50 and<74	Supply on existing route to be reduced by 50% (vehicles and operating licences)
66.6		
74.9	≥74 and <90	Supply on existing route to be reduced by 75% (vehicles and operating licences)
83		
91.3	≥90	Existing route to be withdrawn (all vehicles and operating licences)
99.6		

Thirdly, "Provision should be made be made for an independent dispute resolution process where unresolved disputes arise from the development and application of Seat Allocation Methodology."[196] This merely makes explicit the broadest implication of these technicised negotiations: that the state is not a legitimate arbiter between interests; nor indeed is the state to try and impose its preferred outcomes on even such an undertaking as Rea Vaya. In the case of a dispute, per this proposal, the state could not impose (within the law) a desired policy—it would have to submit to an independent determination as if it were simply another stakeholder.

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[195] Digital file, "Rea Vaya approach and methodology for determining affected operators and routes in Phase 1B: for final approval", 14 September 2011.

[196] Digital file, "Seat Allocation Methodology: Putco comments & proposals", 28 September 2011.
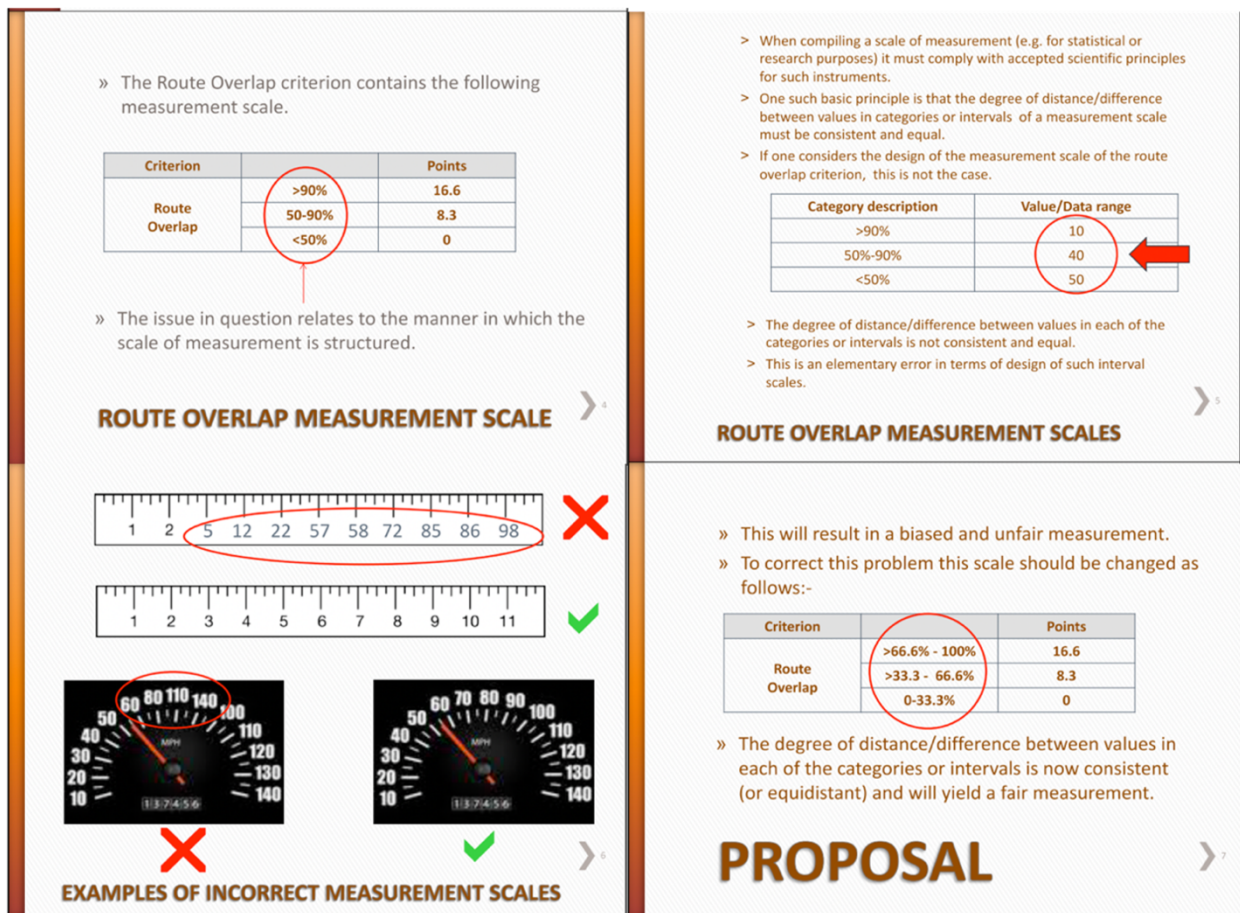
Figure 25: Putco's "Proposal nr 1: Route overlap measuring scale, 2011e"[197]

The denial of the state's policy prerogative is implicit but no less present in the proposals I described immediately above: designing intervals and weightings for a scoring rubric is a *policy decision* as to the relative importance of different factors. Insisting on an ostensibly "neutral" weighting of criteria—that would happen to favour Putco—is just special pleading using technical language. It also denies the state's prerogative to, as in the second example above, focus on reducing higher-cost routes over those that simply share an origin with Phase 1B.

Putco's special pleading won no favours. The City pushed back sharply, rejecting almost all thirteen of Putco's eleventh-hour proposals. However, as the terrain of the negotiation had already been set as that of the technical, the City's response was couched largely, but not entirely, in the same terms:

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[197] Digital file, "Seat Allocation Methodology: Putco comments & proposals", 28 September 2011.

Figure 26: Putco's "Proposal nr 2:Criteria weighting and grouping", 2011[198]

Putco states that the interval between values on a scale should be equal. Firstly there is no universal law that makes this so; there are many types of scales. The Richter scale for measuring the energy contained in an earthquake, for example, has unequal intervals because it is logarithmic. There are many ways of seeing the world other than a linear one. [...]

Putco's proposal in Slide 7 to make all categories have the same range of points rests on a confusion between interval scales and the grouping of measurements into categories which may differ in size. On the basis of the arguments presented by Putco as scrutinised above, we see no reason to change the categories in the Route Coverage Methodology.[199]

In fact in its response the City used the technical terrain, which made it difficult for any party to explicitly claim disadvantage, to defend its methodology:

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[198] Digital file, "Seat Allocation Methodology: Putco comments & proposals", 28 September 2011.

[199] File 32_10, "City Response to Putco Comments and Proposals Made to the Seat Allocation WG of 28 September 2011 Regarding the Seat Allocation Methodology", 26 October 2011.

The City also recognises that, in circumstances where more than one party is vying for a share of a defined amount, it is natural that each party would compete with the other to secure for itself the best possible outcome in any allocation made.

The City is sensitive to the fact that it needs to deal fairly with all the parties in agreeing the methodology, and will therefore not entertain suggested changes to the methodology unless they are material, and are designed to correct a flaw in the methodology, or an unfair bias in favour of one party over the other.

The City finds that Putco has not demonstrated that the methodology is flawed, and *notes also that Putco has not stated that the methodology results in any unfair bias against any party*.[200] (emphasis added)

The City managed to do this while nimbly reasserting the primacy of the developmental logic. In a modelled comparison of the City's methodology and Putco's using a real route, the City shows how its methodology better meets a developmental logic *qua* its policy goals. Figure 27 shows how the two methodologies produce radically different results—a 0% cancellation of the route under the City's proposal, 75% under Putco's—and the City's reason for rejecting the latter on the grounds of impact to commuters, which I am calling "developmental".

Here the discussions jammed, particularly over what came to be called the cash fare issue. One of Putco's proposals was for the cost criterion to be calculated based on the single-trip cash fare on incumbent routes instead of the City-proposed average fare paid by commuters—lower due to week- and month-tickets. The details of Putco's objection are not important here except to note that it quickly dropped the neutral technical language. After the City rejected its proposal it made some technical objections before making its argument and its special pleading plain:

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[200] File 32_10, "City Response to Putco Comments and Proposals Made to the Seat Allocation WG of 28 September 2011 Regarding the Seat Allocation Methodology", 26 October 2011.

As a result of this, the bus mode of transport will be unfairly prejudiced should the discounted multi journey ticket be used as a comparison, rather than the cash fare, which is real cost of a passenger trip.[201]

Putco proposed a compromise: a straight average of cash and multi-journey fares. The City stood firm on a "weighted average… based on actual volumes of ticket types purchased". In response Putco withdrew its compromise and returned to insisting on cash fares.[202] By the first week of December 2011 Putco was refusing to meet with the City and had instructed lawyers on the cash fare issue.[203] Meanwhile Gautrans advised the City to hold its nerve:

[Two officials of the Gauteng Department of Roads and Transport] both cautioned against negotiating with Putco on the grounds of an expired contract that had been extended. Once the contract came to an end, the grounds on which Putco had been included would fall away.[204]

The City appears to have kept its options open, engaging with Gautrans over its timeline for tendering the replacement to Putco Soweto's interim contract. Both the City and the Province had received legal advice that tendering a new contract and allowing Putco's contract to lapse would give the City much greater leverage in the discussions, with the option of walking away, by obviating Putco's incumbency.[205] However for reasons unclear the hitherto amenable provincial officials returned with a mandate that Gautrans would reduce the contract scope "if Putco was agreeable".[206]

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[201] Digital file, "Putco Views Expressed At Bi-Lateral Meeting On 23 Nov 2011" [email], 25 November 2011.

[202] Digital file, "Putco and Seat Allocation Issues: Diary of Events", 9 December 2011.

[203] Digital file, email from facilitator regarding Putco-City bilateral, 6 December 2011; Digital file, "Putco Limited/Rea Vaya Bus Rapid Transport System" [scanned letter]; 5 December 2011.

[204] Digital file, "Minutes of Meeting Held at 10:00 on Wednesday 7 December 2011, between City of Johannesburg (Rea Vaya) and Gauteng Provincial Department of Roads and Transport", 7 December 2011.

[205] Digital file, "Minutes of Meeting Held at 10:00 on Wednesday 7 December 2011, between City of Johannesburg (Rea Vaya) and Gauteng Provincial Department of Roads and Transport", 7 December 2011; Digital file, "Putco Interim Contract No IC48/97 and Rea Vaya Phase 1B" [letter], 8 February 2012.

[206] Digital file, Minutes of Meeting Held at 10:00 on 22 February 2012, between City of Johannesburg (Rea Vaya) and Gauteng Provincial Department of Roads and Transport", 22 February 2012

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Example: Naledi to Randparkridge – City compared to Putco Scoring

Joburg Rea Vaya

Criterion	Answer	City Score	Putco Score
Origin	Walkable	8.3 out of 8.3	20 out of 20
Destination	No	0 out of 8.3	0 out of 20
Coverage	62%	8.3 out of 16.6	10 out of 20
Convenience	3RV plus a taxi or bus (F1+T20+C6+Putco / Taxi to Randparkridge)	0 out of 33.3	10 out of 20
Rea Vaya Cost vs Putco trip cost	R10,50 (Rea Vaya) plus R6,50 taxi (?) = R17 (same as Putco cash fare), but more expensive than Putco weekly ticket	33.3 out of 33.3 (if we use Putco's proposal to use cash fare)	20 out of 20
Total score		49.9 out of 100	60 out of 100
Action		0% cancellation	75% cancellation
Buses to remove		0 buses	6 buses
Seats		0 seats	390 - 480 seats

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Joburg Rea Vaya

⊙ The City scoring gives a credible result, which is to leave this route to continue operating unchanged. To take away 75% of the buses on this Putco route will force 75% of the current passengers to:

○ Make three Rea Vaya journeys, namely the Naledi feeder route in mixed traffic, get off at Thokoza Park and catch the T20 trunk bus, get off at Campus Square and catch the C6 Cresta bus in mixed traffic, and get off at Windsor West and wait for a Faraday taxi going to Randparkridge.

○ Pay R17 in one-way fare, compared to a cheaper Putco weekly /monthly ticket which they would typically use

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Joburg Rea Vaya

⊙ The proposed scoring also results in bringing into play routes that are simply not affected.

○ A route simply has to have an origin on the Rea Vaya route network, and overlap for a third of its length with Rea Vaya network to score 30 points, which means 50% of the buses or taxis must be taken off it. It may cost twice as much to use the RV alternative, it may require you to catch various RV buses and other taxis or buses, but this scoring means that it is treated as a 50% route.

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Figure 27: Comparison between City and Putco proposed seat allocation methodologies, 2011.[207]

The cash fare issue went to mediation, yielding a compromise: Putco would apply the methodology itself, using the cash fares, and present the appraisal confidentially to the City. The City would "evaluate the route appraisal and to see whether from its perspective the outcome of the appraisal makes sense."[208] This process yielded a series of drafts of Putco's route appraisal using its own methodology, which were (according to the City's summary report to Putco) variously plagued by:

- Calculation errors;

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[207] File 32_09, "Summary of City Response to Putco Presentation of 28 September", 26 October 2011

[208] Digital file, "Minute of the outcome of mediation between the COJ, PUTCO, SABOA, Metro Bus, RTC and Top Six held at Tokiso at 10h00 on Friday 3 February 2012", 3 February 2012

- Double counting by treating morning and evening routes separately;

- Using an average bus capacity of 109 rather than the actual 91, even after being cor-
  rected;

- The inclusion of routes affected by Phase 1A but not 1B of Rea Vaya;

- Inclusions of routes absent from Putco's timetable;

- Rounding-up at two stages of the calculations, which alone inflated Putco's affected
  seat count by 26%.[209]

Perhaps most germanely to the cash fare question, however, Putco's single-trip fares were so high that "even a Rea Vaya alternative involving three Rea Vaya trip segments plus a taxi trip is typically rated as cheaper than the single Putco journey and the Putco route scores full points on cost in the assessment."[210] In light of this, we can see Putco's earlier proposal about the down-weighting of fares compared to coverage for what it was: trying to get around the fact that it represented the problem of transport affordability that Rea Vaya was supposed to fix.

Table 11: City summary of successive versions of Putco's proposals, 2012. Each proposal was revised based on errors identified by the City.[211]

Affected Putco Seats	Affected seats	Putco Percentage Share Including Metrobus	Putco Percentage Share Excl. Metrobus	Notes
Putco seats (acc. To Putco) version 1	11009	51.7%	60.8%	
Putco seats (acc. To Putco) version 2	9265	47.4%	56.6%	Revised version due to errors pointed out in Bilateral 1, e.g. with coverage scoring
Putco seats (acc. To Putco version 3	6897	40.2%	49.2%	Revised version due to errors pointed out in Bilateral 2, mainly around alternative fare costing, no. of

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[209] Digital file, "Report to PUTCO: City Of Johannesburg Transportation Department Recommendations and Conclusions on Putco Route Appraisal", 13 March 2011.

[210] Digital file, "Report to PUTCO: City Of Johannesburg Transportation Department Recommendations and Conclusions on Putco Route Appraisal", 13 March 2011.

[211] Reproduced from Digital file, "Putco shares analysis", 6 March 2012.

				taxis required, Phase 1A only routes
Putco seats (acc. To Putco) version 4	5733	35.8%	44.6%	Revised due to agreement by Putco to use 91 seat capacity instead of 109
Putco seats (acc. To Putco) version 5	4550	30.7%	39.0%	Putco will get this no. if they agree to apply the methodology correctly i.e. no bus rounding
City no. for Putco (weighted fare, 91 seats, no rounding)	3276	24.2%	31.5%	This is the correct number for Putco seats acc. to City, using weighted fares, 91 seats and no bus rounding allowed
City no. for Putco after removing double-counting	2594	20.0%	26.7%	
Assumption: City no. for other operators seats incl. Metrobus	10272			Other operators may contest City estimates so these assumptions could change
Assumption: City no. for other operators seats excl. Metrobus	7108			

No agreement was reached and the City proceeded with its own methodology using fares weighted to reflect actual passenger costs. Table 11 above summarises the effect of Putco's multiple revisions compared to the City's own findings. As it shows, the first appraisal by Putco assigned it a 60,8% market share and thus shareholding in the Phase 1B Bus Operating Company, compared to 26,7% by the City's workings (both assuming Metrobus's non-involvement in the operating company, as was ultimately the case).

Here the talks-about-talks either effectively concluded or stalled, depending on interpretation. The City sought and received a legal opinion on how to deal with Putco's intransigence, to the effect that there was no obligation to compromise on methodology nor to accept Putco's

demands for arbitration, but that the City should prepare for legal challenge from Putco regardless.[212]

The City pressed on and Putco indeed challenged it. In a wryly-named "Omnibus Report" to the Mayoral Committee in August 2012, the Rea Vaya team wrote:

> The majority of the seat allocation process was concluded by February 2012 and subsequently delayed by disputes and threats of legal action by PUTCO on the methodology for seat allocation. However there are strong areas of agreement with the other affected operators and a process is now being structured to finalise seat allocation in a way that may not delay the start date of negotiations.[213]

Despite reserving its rights and announcing it would declare a dispute, Putco joined representatives of the two affected taxi associations, Metrobus, and the South African Bus Operators Association in signing a document in August 2012 saying

> So as not to further delay negotiations, it is agreed by the parties that the seats allocated to each operator in the City's Report of April 2012 and reflected in Tables 1 and 2 of this report [following the City's methodology] will be regarded as provisionally correct and the basis for going into Negotiations[214]

Putco nevertheless maintained that it was due 4 368 seats rather than the 2 594 provisionally agreed, even as negotiations over the terms of the Bus Operating Company agreement proceeded. In June 2013 the City and Putco geared up for a process of dispute resolution, only for Putco to abruptly withdraw its dispute and accept the City's methodology for calculating affected seats and Putco's corresponding share in the Bus Operating Company.[215]

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[212] Digital file, "Putco Limited ("Putco")/ City of Johannesburg Metropolitan Municipality ("City"): Litigation Issues As To The Seat Allocation Process", 19 March 2012

[213] Digital file, "Implementation of Phase 1B with focus on Bus Operating Company Formation and Bus Procurement and Funding", 16 August 2012

[214] Digital file, "Record Of Agreement Reached On Provisional Seat Allocation Going Into Phase 1B Negotiations Proper" [signed version], 16 August 2012

[215] Digital file, "Phase 1B Rea Vaya Bus Rapid Transit Negotiations: Update On Status Of Seat Allocation", 2 July 2013.

Nevertheless the BOC was not ready for the launch of operations in October 2013, which as a result required an interim BOC as with Phase 1A. In fact the by-then established operator of Phase 1A, Piotrans, was contracted to provide the interim service. In June 2015, just less than four years after the start of discussions on Phase 1B's Bus Operating Company, Litsamaiso (Pty) Ltd began operations on the Phase 1B routes with a 75% shareholding by taxi operators and 25% by Putco.

5.3. Conclusion: three lessons

This chapter has discussed the negotiations with Putco over its inclusion into Rea Vaya, from its rejected bid for inclusion in Phase 1A to its more successful bid for Phase 1B. it situated these negotiations in the history of Putco and especially the immediate post-apartheid pre-Rea Vaya context, when the South African state at all levels was grappling with a dysfunctional and unjust legacy transport system.

Putco was rebuffed from Phase 1A although it never conceded its claim. It was offered a seat at the table for Phase 1B on the basis of its market share. It first rejected the market share principle, and then tried to claim a very large market share; it meanwhile refused to go into business with the minibus taxis. However Putco lacked the negotiating position of the taxis in Phase 1A, underpinned as theirs had been by the credible threat of violence, and otherwise failed to leverage its position as an incumbent into control over the negotiations. It was ultimately incorporated more or less on the City's terms.

There are at least three major lessons from the long history of Putco and the experience of integrating it into the Bus Operating Company of Rea Vaya Phase 1B.

If it quacks like a politics

The first lesson is that politics, in the purest sense of contestations over the distribution over resources, are inevitable. Any pretension on the City's part to be solving the problems of the Phase 1A negotiations was soon dispatched: the same dynamics quickly re-emerged in Phase 1B. These included the doggedness of the City's interlocutor to defend its commercial interests and gain pecuniary advantage; talks characterised by mistrust and often outright disingenuity; and the enormous cost associated with the negotiations, in resources, time, and attention.

The City's explicit plan had been to canalise into a technicised process the contentious questions of degrees and kinds of incumbency, and how claims on revenue would be distributed. This plan failed and it simply shifted these fundamentally political questions from the negotiations and into the pre-negotiations. If anything the situation was made worse by the state's apparent determination, or at least resignation, that Rea Vaya would not create any losers (even if this was not made explicit as in Phase 1A). By footing the entire bill, so to speak, the state raised the political stakes: participation in Rea Vaya became pure upside for anyone who participated. As a result the competition to do so was extremely stiff.

This echoes and emphasises the theme of the previous chapter: the central challenge of development is the politics of incumbency. Putco had an undisputed claim to the revenues and subsidies of road transport to and from Soweto for three-quarters of a century. This incumbency was rooted in policy decisions in the 1940s and cemented by—and integral to—the spatial political economy of apartheid. Despite recognising the problem, the first post-apartheid governments intervened tentatively and partially, until ultimately putting their hopes on BRT as a way to deal with Putco's incumbency. The techno-fix was no fix at all, and embroiled the state into contestation over that incumbency; but because it was in some sense in denial about the political nature of the problem, it was unprepared for the vigour with which the incumbent defended the inherent interests of its position: maintaining and extending it.

Informal is as informal does

The second lesson is that the distinction between informal and formal transport operators, represented by the taxis and Putco, is of limited use both analytically and for policy. There is no non-tendentious criterion of formality to distinguish the two: their origins were similarly a matter of public policy, their legal constitutions similarly permitted but minimally-regulated, and when their incumbencies were threatened their defence (or defensive offense) was similarly spirited.

One distinction between the two is that Putco was and remains heavily subsidised by the state, whereas the taxis were and are net contributors to the fiscus, setting aside externalities, through payment of fuel taxes, licensing fees, and so on. But subsidy is not a dispositive criterion of formality, especially given the typical normative associations: informality and subsidy both being less desirable than their alternatives. The other distinction is, of course, race. There is no

doubt that formal and informal, at least but not only with respect to transport and other commerce in South Africa, are racialised terms. But just because that distinction exists in practice it does not follow that we should reify it in analysis—or in policy. Where it might most easily lead us astray is that informality does not entail a set of interests, in that two informal actors have no reason to want the same things with respect to their informality and relationship with the state. Incumbency entails perhaps the clearest interest of all: to maintain, and extend, a position of advantage. The latter is a much more analytically consequential category.

If we concede this non-distinction between formality and informality, then we can conclude one of two things. We might conclude that the process of integrating Putco into Rea Vaya was one of formalisation, as is frequently said of the taxi industry (e.g. Venter, 2013). Thus Putco the informal operator was brought into the legal fold, made respectable by its inclusion, and set up for steady further improvement as a transport provider. This however introduces a normativity that sits uncomfortably: it suggests that any corporation with a long history of cutting corners, ill-service of its customers and its funder, and a trigger-happy approach to defending in court and elsewhere its entitlement to state funds, has a *further* claim to state largesse to improve its service rather than being subject to either market competition or assertive policy to rein it in.

Better to take the second option, and abandon the concept of formalisation and its whiggish implications. It is not that there are informal operators deserving of a chance to make good and take their rightful place among the formal; and indeed deserving of benefit from development finance and policy to make it so. Rather there are simply incumbents, whose involvement in transport provision may be positive or negative or (most likely) mixed; and whose claim to inclusion in any reformed system is strictly a matter of policy strategy—about how best to provide transport—and the political tactics of how to achieve it. While incumbents may have valid claims based on historical injustice, those should be engaged with openly with respect to class, poverty, race, or another concrete basis, and compensated if necessary. This may mean some sort of affirmative action or direct compensation. Dealing with claims to special treatment on the basis of informality, as we see in the case of Rea Vaya, serves only to mystify what is fundamentally a matter of incumbency. To deal with incumbency by adopting its logic, or consolidating it in place, is to concede too much.

Incumbency and statecraft

The third lesson follows from this chapter read along with the previous one. That is, the stakes and the terms of these two negotiations were not just the awarding of specific lucrative contracts. They were more fundamentally about how the state was to conduct its business, how it should procure public services, and what remit it had to regulate society and the economy.

A logic of incumbency makes strong claims as to what the state may not do: it may not regulate to the detriment of the incumbent; it may not displace the incumbent; and in its most extreme articulation the state must not allow any diminution of the incumbent's profits. We see versions of each of claims these throughout both negotiations in both chapters. The logic of development, on the other hand, gives enormous licence to the state: who dares stand in the way of development?

How the state is permitted and able to act with respect to private actors is integral to its form and nature. So, by extension, is the logic by which the state can operate. The contract state was a creation of statecraft, and has been given form through just such clashes as these. Putco had long before secured an urban state with itself in a position of enormous privilege—in the literal sense. It successfully fought to reproduce that state against multiple attempts, over decades, to dislodge it. With Rea Vaya it attempted to leverage that position of strength into a similar position in the City's project of statecraft. Unlike the taxis, however, it failed in this, and had to concede to the City's vision of the state and Putco's role in it.[216]

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[216] Here I am not talking about logics in the sense of rationalities, per Watson (2003) or Townley (2008). Their rationalities are incommensurate worldviews, each of which may be internally rational but which cannot be bridged making communication impossible. The logics of incumbency and development are perfectly legible to one another; the clash between them is one of interests, not of cultural or cognitive paradigms.

6. The long bus ride through the institutions: the institutional political economy of Rea Vaya

The three previous chapters dealt with Rea Vaya *qua* project of transport infrastructure investment and operations reform. This was certainly a significant facet of Rea Vaya and the one that attracted the lion's share of political and bureaucratic attention as the project was unfolding. However Rea Vaya was undertaken as part of a movement of large-scale institutional reconfiguration in South Africa, South African cities, and South African urban transport. This reconfiguration included a recently established system of metropolitan local government negotiating its division of labour with an only slightly older provincial government system; and open contestation over the appropriate institutions to deliver and govern transport in the new cities. In this context, it was all but inevitable that a large and locally unprecedented project like Rea Vaya would involve institutional shifts.

The existing literature has engaged somewhat with the institutional politics of BRT. Poku-Boansi and Marsden (2018) have explored the governance reforms that accompanied Accra's BRT implementation. They note the various institutions recruited into and set up for the establishment of the BRT, and the shifts in responsibilities between them. They conclude that "BRT is in fact a stimulus for wider governance reforms" (p. 200) and call for greater attention on the institutional aspects of BRT. Paget-Seekins (2015) offers a higher-level analysis of BRT as a "neoliberal contradiction" but this focuses on the contracting model typically chosen by the government and not on the institutional reforms within the state.

Klopp, Harber and Quarshie (2019) argue that BRT has been a vehicle for "metropolitanisation" of transport in African countries; that is to say, the establishment or empowerment of state institutions responsible for the entire extent of a city, as opposed to legacy local governments whose ambit is typically much smaller. This is closer to the project of this chapter, which will argue that as much as Rea Vaya was a transport project it was also and thereby an intervention into an active contestation about the nature and purpose of the city. The City of Johannesburg's rival claimant to city governance, the Gauteng Provincial Government, undertook its own transport megaproject at the same time as Rea Vaya and the two were developed in close parallel and ambiguous cooperation. These two projects were each manoeuvres in a war over the

legitimate government of the city and indeed the city's very nature. In short, Rea Vaya and Gautrain were projects of statecraft and scalecraft as discussed in Chapter 2.

The institutional politics of, around, and leading into Rea Vaya were all multilateral amongst several spheres of government and parts of the private sector. They shifted constantly over the period the project unfolded, and—as shall be seen—are often visible only obliquely and indeterminately. To discipline the chaos, the chapter will look at the two major non-City overarching institutions—National and Provincial governments—and focus on discrete instantiations of an overarching, sometimes ambiguous, institutional contestation. It will show that alongside the literally concrete implementation of Rea Vaya, the institutional realignments conducted with and through the bus system were at least as significant, with stakes at least as high.

6.1. Rea Vaya and the national government

The National government was involved in Rea Vaya from the very beginning. The three key institutions here were the National Department of Transport, the National Treasury, and the Presidency. But before describing how the national government was involved let us note how it was not.

Rea Vaya remains unique among BRTs in Africa for being a municipally planned and implemented project. As described in Chapter 1, all other BRTs on the continent, existing or planned, are the remit of metropolitan agencies (Klopp et al., 2019). This institutional form is relatively new in the region and not formally defined, but the examples outside of South Africa share certain characteristics. They are newly established, typically as part of the BRT project. They sit outside of and alongside existing municipal governments, multiple of which fall under the spatial remit of the metropolitan agency. They are technocratic organisations whose leadership is appointed rather than elected, and where electoral accountability is limited to board seats nominated by elected government organisations. And these organisations are formally accountable, through appointments, budgets, and performance monitoring, to national or (in the case of Nigeria) state government.

This all results in "upwards" accountability, in contrast to "downwards" that would imply more direct electoral accountability (Klopp et al., 2019). Klopp et al. (2019) argue that having to formally account to political structures much larger than the area that such an agency is

responsible for attenuates its interests in and incentives for effective delivery of transport systems. This is because the prospective users of the new system form only one among many constituencies to which the agency's political principals account. This attenuated interest reduces the importance of building an effective transport service relative to other interests such as the prestige of political principals.

In contrast, Rea Vaya was never proposed to be in the formal remit of the national or provincial governments. The reasons for this likely included the new constitutional order that established strict principles of subsidiarity—that is to say, that government services must be devolved to the smallest appropriate sphere of government (discussed fully below, in relation in Gauteng Province)—and the resulting even newer metropolitan system of local government which produced the City of Johannesburg and its peers with a new set of wide-ranging powers, mandates, and resources.

In all, we can say that the fact that Rea Vaya remained squarely a municipal project despite strong national government interest was both unique on the continent and supportive of the emerging regime of subsidiarity, devolution, and (unevenly) empowered local government in South Africa. None of which is to say that the national government was not closely involved in various consequential ways with the planning and implementation of Rea Vaya.

Enabling and encouraging Rea Vaya

The national government was an early booster, enabler, and driver of BRT uptake in South Africa, particularly Rea Vaya. Chapter 3 described the outbreak of "BRT fever" (Wood, 2015c) in South Africa; this section describes the national government as a key transmission path of that condition.

Wood (2014a) describes a process of policy circulation driven in part by individual national government figures. Jeremy Cronin, as Chair of the Parliamentary Portfolio Committee on Transport, discussed BRT in the context of transport devolution, with explicit reference to Lloyd Wright and Walter Hook: two of the key international consultants discussed in Chapter 3. Cronin would later be praised by Hook for his role in circulating BRT ideas (Wood, 2014a). Similarly Ibrahim Seedat, Director of Public Transport Strategy at the National Department of Transport

(NDoT), was involved from an early stage in propagating BRT as a policy concept through local government (Wood, 2022).

Apart from the National Department of Transport, the National Treasury played a large role in the establishment of BRT as a policy paradigm in South Africa. A confluence of circumstances created a strong constituency for BRT within the Treasury, even if its interventions were formally technology-neutral. The Public Finance team at the time was building multi-disciplinary capacity and hiring among others urban planners; these planners brought with them the legend of the South American BRTs:

> The planner's Holy Grail. I haven't been to Curitiba, but every other planner I know has been (*laughs*) on a pilgrimage to Curitiba. […] soon after Curitiba there was Bogota and it was really once Bogota was happening that I became more tuned in to BRT as a transit solution.[217]

This building of urban expertise and interest was not limited to Public Finance. In 2003, the Treasury had launched an offshore investment amnesty. South Africans who had evaded apartheid's strict exchange controls to move money offshore could repatriate their money without prosecution by paying a modest exchange control levy and once-off income tax on the repatriated money (Gidlow, 2006). The amnesty windfall was earmarked on the direction of the Minister of Finance to township development, establishing a new direct interest by the Treasury in improving urban spaces and creating a bureaucracy and expertise in the form of the Neighbourhood Development Grant.[218]

Meanwhile there was a reckoning underway with how and where the state was spending money on transport:

> So this is the Treasury view on Transport, which is bleak. Just basically saying, 'oh Transport Department is messing up. You know, like there's this endless demand for rail and we never get anywhere, we never give them enough to do the

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[217] Interview with former national official, 4 May 2018.

[218] Interview with former national official, 4 May 2018. Neighbourhood Development Grant was the name of both the unit and the grant it administered.

recapitalisation properly. Roads are just sucking up most of the budget, the roads are not getting any better…' […]

But there was an in-principle kind of decision or a policy decision in Treasury that we should be putting more money into public transport and that transit-led spatial transformation was a good idea, because they were also pretty bleak about the ability of the cities to achieve the transformation. We had at that point [the mid-2000s], we'd been talking about it for 10 years and hadn't got there.[219]

This dovetailed with an increasing push for devolution of the transport function according to the principle of subsidiarity. Desirous of transferring control and particularly money directly to the cities rather than through the gatekeeping of provincial governments, National Treasury approached the National Department of Transport to administer a new grant: the Public Transport Infrastructure and Systems Grant (PTISG, sometimes PTIS). This grant, which provincial governments had a role in administering, was intended for "supporting capital expenditure to establish new transport systems in line with national Department of Transport (NDoT)'s Public Transport Strategy and Action Plan." (National Treasury, 2015, p. 2).

The City had already received R103.88m in ad hoc "2010 [World Cup] Legacy Funding" for the SPTN.[220] The new PTISG institutionalised this funding for future years and other Cities:

…the World Cup was coming in and so in some ways that hijacked a lot of the initial processes around the PTIS […] it was opportunistic and it was a good way to get things going and we were muddling through. (*Laughs*.) But in some ways it shifted the focus and the opportunities around how the grant was allocated and who got what share and all of that sort of thing, and how things were designed, because it would put a huge amount of time pressure on the whole thing. […] But the award had been made about the World Cup – the bid commitments were on the table, the cities were grappling with how to achieve the transit and people

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[219] Interview with former national official, 4 May 2018

[220] File 14_04, "Rea Vaya Bus Rapid Transit Network Previously Strategic Public Transport Network Priority Statement for 2008/9 and 2009/10, 31 August 2007

movement aspects of their commitments. […] So this was the grant that was going
to help the cities achieve their World Cup commitments around transport.[221]

Accordingly, the PTIS was initially administered by a dedicated World Cup branch of the National Department of Transport. As the primary host city of the World Cup and also the first-mover on BRT in South Africa, Johannesburg would take the lion's share of this early money (Boulle and Van Ryneveld, 2015).

The new grant was designed to be nominally technology-neutral: any transport system that met the brief of transport improvement, with an element of taxi industry "transformation" (formalisation), would be eligible. However the International Institute for Energy Conservation (IIEC), "very much part of the global lobby for BRT",[222] was appointed by the Department to help cities bid for the grant, resulting in at least strong guidance towards BRT as the presumptive technology for access to PTIS funds. This meshed with the specific design of the PTISG that would pay only for infrastructure; operations would have to be covered by the system itself or other sources of revenue within the city. This grant design strongly motivated for a solution that used capital expenditure to reduce operating costs, preferably as close to or over the line of profitability as possible as cities would have to cover operating subsidies out of their existing budgets. As discussed in Chapter 3, the potential for profitable operations was the ostensible selling point of BRT both internationally and specifically in South Africa. Indeed this selling point informed the design of the grant: the "optimistic costing"[223] of BRT contributed to a grant designed to pay only for the infrastructure and not operations. As a National Treasury consultant was to later put it:

> The Public Transport Network Grant has represented the first major injection
> of public transport funds to city level institutions in South Africa's history and has
> been a key instrument in beginning to build city level capacity. Unfortunately, the
> funding was, in effect, initially conditional on the implementation of BRT systems,
> which were not always appropriate to the context and difficult to design and

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[221] Interview with former national official, 4 May 2018

[222] Interview with former national official, 4 May 2018

[223] Interview with former national official, 4 May 2018

implement successfully. In some instances this has disrupted rather than help build local capacity. (van Ryneveld, 2018, p. v).

We see, therefore, that the national government was integral not just in enabling BRT in South Africa but in directing cities into it as a transport solution following the early lead of Johannesburg. More than that: Rea Vaya and its fellow BRTs had a reciprocal effect on the national institutions of transport and municipal governance and financing. A major early fully-devolved urban grant was built, in practice if not in principle, to deliver BRTs—Rea Vaya first and most prominent among them—and was designed at least partially around the financial specifications of BRT. The PTISG, later to become the Public Transport Infrastructure Grant (PTIG) and Public Transport Network Operating Grant (PTNOG), and later still recombined into the Public Transport Network Grant (PTNG), was a recalibration of the relationship amongst various national government departments and the other spheres of government (National Treasury, 2015). The National Treasury took a major step, in the name of sound public finance, into the responsibilities of a sector department; provincial governments were cut out of a crucial flow of funds that they would otherwise have administered and exerted influence over; and cities, for the first time, were able to bid for a significant source of funds to spend at their broad discretion within the terms of the grant. This is a straightforward example of statecraft as described in Chapter 2: policy as not just the end, but also (and sometimes primarily) the means of institutional reform.

Regulating and directing Rea Vaya

The broad discretion afforded to Johannesburg over the spending of the PTISG and the implementation of Rea Vaya did not at all mean that the City was left to the task. This section will show that the national government remained closely involved in the project as a matter of major profile, stakes, and prestige locally and internationally. This too would involve institutional contestation between and among elements of the state. This section will discuss briefly the influence of the National Department of Transport and the Presidency in turn.

From the very start the National Department of Transport was closely involved in the design of Rea Vaya. The minimal conditionality of the grant did not diminish the Department's overall regulatory and policymaking prerogative. It took a close interest in the design of Rea Vaya, not least because it was looking ahead to a BRT-dominated urban transport future across the country.

National regulations were being drafted in parallel to discussions on the technical specifications of Rea Vaya, and long before formalising the regulations the Department took a strong line on everything from engine emissions standards to seating arrangements to bus turning radii.[224] Upon eventual publication, the regulations became nationally binding.

The most consequential issue on which the Department made its mark was on fare media, or ticketing. Rea Vaya was always to use electronic ticketing. As discussed in Chapter 3 the pre-sumptive technology was a "closed loop" system, where the smart card simply holds a local record of tickets purchased or monetary balance. These are "spent" by tapping into and out of the system. However the Department pushed extremely hard to use an "open-loop" EMV-based system. EMV is the contactless standard used in debit cards, and is "open-loop" in the sense that it holds, not specific tokens for a specific purpose, but a link to a bank account elsewhere the contents of which can (in principle) be spent on anything. An open loop system is much more complicated, technically and institutionally: it requires constant real-time telecommunications across the system and through a banking network; much higher levels of security; and an ongoing relationship between the transport network and financial institutions. It requires issuing essentially a debit card to every rider and as such constitutes a financial product, which in South Africa was subject to an additional layer of regulation including the need for Rea Vaya to collect and maintain proof of identity and proof of address for every ticket holder.

Johannesburg's international consultants warned that the technology was untested—literally, globally, for transport ticketing.[225] The Department's own international consultants warned, not once but twice in so many words, that

> NDoT should be careful in mandating a fare technology that is overly restrictive on the design of the systems. In particular, forcing cities into overly complex fare technologies may result in inefficiencies and start-up problems. (Viva, 2007, pp. 4 and 24).

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[224] File 08_05, Minutes and emails with NDoT about national BRT standards, September-November 2007

[225] Digital file, correspondence regarding fare technology, emails dated 16-18 July 2008

Indeed this came to pass and the EMV standard was forced onto the Rea Vaya team over its protests. It was probably not the major factor for the early and ongoing ticketing failures of Rea Vaya, for reasons discussed in Chapter 3, but it nevertheless contributed significantly to the cost and complexity.

It is hard not to read the National Department's behaviour on the ticketing system as an example of Frick's (2008) "technological sublime", with solutions-minded policymakers fixing on the extraordinariness of technology available to them. Drawing on Frick, Flyvbjerg describes the technological sublime as

> the rapture engineers and technologists get from building large and innovative projects, with their rich opportunities for pushing the boundaries for what technology can do, such as building the tallest building, the longest bridge, the fastest aircraft, the largest wind turbine, or the first of anything. (2014, p. 8).

Although more modest than these examples the ticketing system fits the bill, with national policymakers fixing on the technical marvels, by the standards of 2008, of a public transport ticket that could also be used by an otherwise unbanked rider to pay for groceries, rides on other public transport systems, or indeed anything at all. It was not enough for Rea Vaya to convey people affordably and efficiently around the city. It had to be designed to solve a whole swathe of social problems; in this case uneven access to financial services, by way of its ticketing system.

Much more directly damaging was the intervention of national politics into the negotiations with the minibus taxi industry. As discussed in Chapter 4, at the height of the negotiations over the formation of the Bus Operating Company for Phase 1A the discussions were partly nationalised by fiat of the incoming National President. He and the subsequent national talks publicly committed to pausing the already-lagging project, to the project benefiting "all stakeholders", and to making commercial opportunities throughout the "value chain" of Rea Vaya available to the taxi industry.[226] The national government had previously committed to the BRT projects leaving no existing operator worse off (ITDP, n.d.; Schalekamp and Behrens, 2013). These

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[226] File 31_15, "BRT Value Chain Framework Document, Final draft for Mayoral Committee", 9 September 2009; File 29_17, "Discussion Document: Talks about Talks: City Team Starting Points and Position", c. August 2010

interventions made the negotiations significantly more challenging by throwing into question who was negotiating on behalf of Rea Vaya, whether the negotiations were about a specific project or a national policy, and not least by giving away the farm so to speak.

These regulatory interventions by the national government should be seen as further examples of statecraft. Although they did not result in new institutional arrangements like new agencies or the PTISG, they nevertheless show Rea Vaya being used for institutional contestation. The project was wielded by the City of Johannesburg to exercise newfound autonomy and authority, which the National Department of Transport blunted by reasserting its regulatory power. Meanwhile the Presidency used the project as a political tool with the minibus taxis, thereby undermining both the National Department's and the City's autonomy. These are all archetypical acts of urban statecraft: tussling over the institutional form of urban governance as an end, by means of a specific project.

6.2. Rea Vaya and the Provincial Government

As mentioned in the section above, the Gauteng Provincial Government (GPG) was cut out of the flows of money and with them the major decision-making around Rea Vaya. In fact, as discussed, part of the major institutional reform led by and driven by way of Rea Vaya was the devolution of transport infrastructure and operations. However the Province remained a powerful institutional player in transport in and around Johannesburg, and played its own part in the statecraft around Rea Vaya. This section will look first at the moments of direct interaction between Gautrans (the Gauteng Provincial Department of Roads and Transport) and Rea Vaya. It will then look at what I argue is Gauteng's own answer to the question of (Greater) Johannesburg's transport future: the Gautrain Rapid Rail Link. The Gautrain, while only in partial competition with Rea Vaya as a mode of transport, is nevertheless in direct competition over bigger issues of transport and urban governance, and indeed over the answer to the question: what is the city? All of which is to say that, as this section will show, the contestation between these two state-driven transport infrastructure projects was a prime site of both scalecraft and statecraft with the City of Johannesburg and the Gauteng Provincial Government locked in contestation most directly with one another.

Institutional and spatial incumbency

Gautrans, until the advent of Rea Vaya and the associated (partial) devolution of transport to metros such as Johannesburg, was the major transport regulator and contracting authority for the area of Gauteng. This section will show how Gautrans and the broader Gauteng Provincial Government held *institutional* incumbency and exercised it in such a way that posed challenges for the implementation of Rea Vaya. By institutional incumbency I mean a state institution presumptively exercising control to some degree in a way that must be reformed or surmounted for a policy or project to be implemented. Like an incumbent firm an incumbent institution represents potential or likely resistance to change. While the state might nominally have direct control over all of its constitutive institutions, in practice—as is visible with respect to Rea Vaya—that does not itself rule out the problems of institutional incumbency. In Rea Vaya this was the case despite a single political party controlling all three of the national, provincial, and local governments in question.

First I will look briefly at the immediate pre-Rea Vaya state of incumbency. Then I will show how the Rea Vaya-driven devolution of public transport finance and authority greatly increased the autonomy of the City. However the incompleteness of that devolution, and the resulting rump of powers left with Gautrans, were enough to significantly interfere with the implementation of Rea Vaya and become a site of contestation between the Province and City.

As discussed, Rea Vaya represented a major shift in the institutional arrangements for urban transport governance: "the first major injection of public transport funds to city level institutions in South Africa's history" (van Ryneveld, 2018, p. v). This devolution was the second in a relatively short time. During apartheid transport was a national government function; an attempted 1990 reform, involving devolution to local government, had been withdrawn pending anticipated post-apartheid reform of the local government system (Ellison, 1992). The 1996 constitution established dramatically reformed provincial and local government structures with passenger transport as a jointly exercised function.

Accordingly in 1997 the National Department of Transport transferred responsibility for all inter-municipal bus contracts to the relevant provincial authorities. This is the origin of the situation described in the previous chapter, in which Putco Soweto's interim contract was concluded with Gautrans, as were the subsequent years and eventually decades of extensions thereto. The 2000 amalgamation of local municipalities into the Metropolitan Municipality of Johannesburg,

effectively converted the entirety of Putco Soweto's hitherto intermunicipal service into an in-tramunicipal one. Figure 22 from the previous chapter showed the termini and routes of Putco Soweto's services all lying within the new metropolitan boundaries. This provincial control of a now-municipal bus service is the first area where Gautrans held institutional incumbency, con-straining the negotiations between City and Putco, as dealt with in Chapter 5.[227]

The second area where the Gauteng Provincial Government held institutional incumbency was over the regulation of public transport operators. The National Land Transport Transition Act of 2000 established provincial Operating Licence Boards solely responsible for issuing route-based operating licences to all public transport operators (Cameron, 2005; Palmer et al., 2017; Wosi-yana, 2005). These OLBs were made responsible for managing the conversion of old radius-based permits to route-based operating licences as well as issuing new licences with guidance from municipal governments. By the time of Rea Vaya, however, the Gauteng OLB was "in ad-ministrative shambles" and had all but ceased to issue operating licences, leaving the City of Jo-hannesburg to count Potentially Affected Operators on the basis of their receipts for as-yet un-processed licence applications.[228]

> If public transport regulation was working as it should, one would be able to ascertain which Operating Licences (OLs) reflected any of the affected routes. Of the total number one would then be able to work out how many "part time" vehicles are on the route and cancel the route on a sufficient no. of OLs. However, the poor quality of records, enforcement and the information recorded on OLs does not in all probability make this possible." (Digital File, Operating Licence Detailed Plan, 19 July 2009)[229]

The OLB not only licensed the taxis who would need to surrender their licences to participate in Rea Vaya; it would also need to license the Rea Vaya buses themselves:

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[227] Note that by 2018, Gautrans was apparently trying to renounce this incumbency: "Now Province want to dump Putco on us and we're refusing to have it dumped" (Interview with former municipal official, 24 May 2018).

[228] File 03_05, "BRT Phase 1A Joint Working Group on Participation Meeting Between City of Johannes-burg And Taxi Industry", 26 March 2010.

[229] Digital File, "Operating Licence Detailed Plan", 19 July 2009.

There is an issue that the licensing of bus routes lays with the provincial government rather than with the city of Johannesburg. The provincial government has its own interests, and if the city cannot clearly demonstrate the legal authority to regulate the bus routes, this may make the banks nervous about the ability to protect the BRT's concession rights.[230]

In the event, it appears that there was cooperation on Rea Vaya between the Gauteng Operating License Board and the City of Johannesburg, and the Province did not assert its own interests in this way.[231] Nevertheless, to this day this remains a site where Gauteng Province holds institutional incumbency as a key regulator over Rea Vaya: one whose dysfunction threw up obstacles to the process, and one which remained outside institutionally, and outside of the control of, Rea Vaya.

The third area of institutional incumbency was one where the Gauteng Provincial Government exercised more deliberate power over the City. The Gauteng Department of Agriculture, Conservation, and Environment (GDACE) was responsible for approving Environmental Impact Assessments (EIAs) and this is a power it exercised, in both the commission and the omission, to great effect on Rea Vaya.

The need for environmental approval was flagged in the very earliest documents of Rea Vaya. As early as November 2006 a Mayoral Committee report on Rea Vaya's scoping study had noted that

Obtaining positive Records of Decision (RODs) from the Provincial Department of Agriculture, Conservation & Environment (GDACE) to implement Rea Vaya infrastructure is a large challenge and risk. As an example, there has been an EIA exemption application with GDACE for the Industria to Parktown section of the SPTN for the past 18 months, and all efforts at the highest level by the [City] Administration have failed to resolve the delay.[232]

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[230] File 02_10, ITDP Memo to City of Johannesburg, 31 March 2008.

[231] File 03_05, "BRT Phase 1A Joint Working Group on Participation Meeting Between City of Johannesburg And Taxi Industry", 26 March 2010.

[232] Digital File, "Report on the "Rea Vaya" Bus Rapid Transit (BRT Scoping Study", 9 November 2006).

Nearly a year later, under "risks associated with the project", the project's application for approval as a World Cup 2010 Legacy Project read:

> The process to get EIA approval before construction can commence is currently the biggest stumbling block that prevents implementation. The short time frames available to implement projects versus the constraints placed to get approval to implement BRT within the current road reserves remains the biggest constraint and danger to implement this project on time.[233]

The same document added that EIA delays had already contributed to the City rolling over to the next year's budget R103,6m of a total R106,9m assigned for 2005/6 to the SPTN, Rea Vaya's predecessor project.

In the event, construction delays due to EIAs were a well-identified but not -mitigated risk. By February 2008 the team reported to the City that "EIA issues are very serious".[234] The Rea Vaya Steering Committee was told that "according to GDACE the BRT project has not been prioritised"[235] and that

> EIA: Consultants […] say legally we're doing everything right but we're just not getting the support that Gautrain had. GDACE broken promises in <u>writing</u> […] probably nothing sinister.[236] (emphasis in original)

The City was relying at least in part on the environmental impact assessments already approved for the SPTN. The mounting delays hinged partly on the question of whether BRT was the form that SPTN would take, or whether it was a new infrastructure project on the same route:[237] "GDACE […] is adamant that if we are working within the SPTN footprint with the SPTN ROD

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[233] File 14_04, "Priority Statement for 2010 World Cup Public Transport Legacy Projects", 31 August 2007.

[234] File 04_09, "Budget Panel Presentation", 1 February 2008.

[235] Digital File, Minutes of Steering Committee Meeting #5, 13 February 2008.

[236] File 06_15, Personal notes from BRT Steering Committee, 13 Febrary 2008.

[237] The metaphysical difficulties with delineating the boundaries of a project—including the SPTN/BRT boundary—are discussed in Chapter 7.

[Record of Decision], but [if] we doing BRT, they would stop us."[238] That quote also makes clear that this is an active exercise of institutional incumbency. The provincial government is not merely withholding a function, as with the operating licences, but exercising regulatory discretion over the nature of Rea Vaya. It took until nearly the end of the year, and the resignation of the responsible official in GDACE, for the environmental approvals to be approved for Rea Vaya Phase 1A.

In the later planning and implementation of Phase 1B the EIA approvals do not appear to have been held up by the provincial government. This indicates some level of institutional reform, however "soft", in this process: a rapport between institutions of state, some measure of alignment of processes and perhaps even goals. However overall it cannot be said that the process of securing Environmental Impact Assessments for Phase 1B went smoothly.

There is another form of incumbency that we might call spatial incumbency, or just NIMBYism:[239] when the incumbents of a particular area exercise their power to resist local change. There is no inherent mechanism for incumbents to resist change, short of violence; but many urban planning regimes give residents powers ranging from consultation to effective veto. In the mid-2000s in Johannesburg there was no such veto, but there were and are nevertheless requirements for local notification and consultation for land-use changes and infrastructure development. Projects found not to have consulted sufficiently at this stage can find themselves far aground, separately from their projected environmental impacts. In the planning of Rea Vaya Phase 1B, spatial incumbents used the provincial EIA process to demand, and eventually win, a substantial revision to the route.[240]

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[238] File 06_07, Minutes of Rea Vaya BRT (Bus Rapid Transit) Management Team (BMT) meeting, 29 May 2008.

[239] Not In My Back Yard-ism: "a self-serving attitude among citizens who oppose any infrastructure measures in their immediate neighbourhood" (Anheier, 2017, p. 64).

[240] Bradlow's (2021) "weapons of the strong" is in large part an account of statecraft based on spatial incumbency, with reference to Johannesburg.
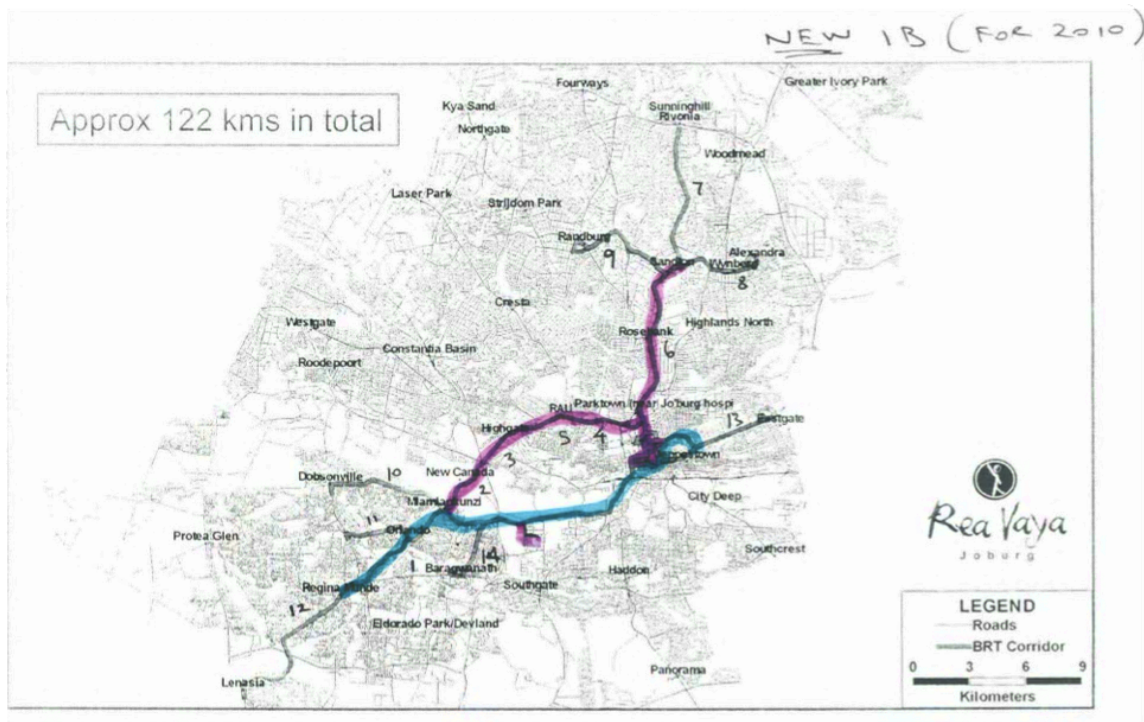
Figure 28: Phases 1A and 1B of Rea Vaya as of mid-2008.[241]

Phase 1B represented the first extension of Rea Vaya into the leafy "northern suburbs" of Johannesburg: the arc of areas north of the CBD whose residents trend whiter and wealthier than those further south, and particularly as far south-west as Soweto (Crankshaw, 2008; Mabin, 2014). See Figure 28 below for the planned route of Phase 1B from 2008 until 2009: a route from Soweto to Parktown, in parallel to Phase 1A, and then running north to the growing financial and business hub of Sandton. This latter link was to take Rea Vaya along Oxford Road, a busy and extremely car-oriented thoroughfare separating the wealthy suburbs of (among others) Saxonwold, Rosebank, and Hyde Park on its west from Houghton, Killarney and Melrose on its east.

The reasons for planning the Oxford Road route for Rea Vaya were numerous. The first is that the Soweto-Sandton link was increasingly the busiest and most important public transport connection in Johannesburg, and was entirely unserved by the City because of the monopoly held by provincially-contracted Putco. The City's intention to serve this route dates back to the

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[241] File 02_02, Route maps of Phase 1 sub-phases, undated mid-2008. Blue is the planned route for 1A; purple is 1B. Note the extension of 1B north from Parktown through Rosebank to Sandton. Connecting Sandton to Soweto in the southwest was a primary early objective of Rea Vaya.

Integrated Transport Plan of 2003, prefiguring the SPTN (City of Johannesburg, 2003a). Once SPTN became Rea Vaya, various other reasons were articulated for the Oxford Road route:

- The service was supposed to provide a direct service between the hotels in Sandton and the northern suburbs and the World Cup stadiums at Nasrec and Ellis Park.
- The Alexandra taxi associations (ATA) are particularly difficult and vociferously anti-BRT, making some government leaders to want to bypass routes that would directly affect them.
- The traffic congestion is severe in the northern suburbs, and the business communities in Sandton and Rosebank and Randburg were very keen on a high quality mass transit link.
- *Progressive elements of the government felt that it would be a powerful political statement to take away road space from private cars to facilitate travel by modest income residents right through the wealthy suburbs.*
- The Sandton route provided better connectivity with the Gautrain
- The Sandton route made more sense as a part of the long term plan[242] (emphasis added)

Like all ambitious challenges to the status quo, this one provoked a vociferous reaction (Robin, 2017). The residents of Saxonwold in particular, united under their residents' association, turned out in force to consultation meetings and literally shouted down city officials (Dugger, 2010). This dramatic, political action would later be rendered drily as "objections were raised by some of the interested and affected parties along the Section 6 route during the Environmental Impact Assessment (EIA) process during 2009".[243] In the event these actions sufficiently complicated the EIA process, and rattled the City, that it conceded Oxford Road and in fact abandoned the idea of completing a northern link from the CBD in time for the World Cup. That northern link would become Phase 1C on an entirely different route northward. As of April 2023, Phase 1C running along Louis Botha Avenue has been built but not yet commenced operations.

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[242] Digital file, Draft Background Report for Critical Decisions Workshop, 13 September 2009

[243] File 21_02, "Rea Vaya BRT Consideration of Options for Next Phase of Implementation" [Mayoral committee report], 1 September 2009

In all we can see a range of institutional dynamics visible between the provincial and city governments in the implementation of Rea Vaya. The case of Putco involved straightforward institutional incumbency on the part of the Province, foiling the spirit and the letter of the municipal transport reforms represented and led by Rea Vaya. The Operating Licence Boards look much more like institutional failure, without agenda, that needed to be navigated by both City and Province. The EIAs for Phase 1A represented a more wilful flexing of institutional muscle by the Province, defending its role in transport governance against powers newly-devolved to the City. In the EIAs for Phase 1B, the Province plays a role only in the background, as the anticipated gatekeeper of environmental approval: the major dynamic visible is brute political economy, power exercised by stakeholders determined to drive that stake through the heart of the Oxford Road route. Nevertheless in the cases both of Putco and the residents of Saxonwold, incumbent opposition ran partly through the institutional incumbency of the Province.

These three examples show at least two things. The first is the significance of institutional incumbency. The threat of incumbent institutions to state policy, project, and reforms is why, as Chapter 7 will argue, statecraft is inherent to any sizeable state undertaking: to do something novel, the state must be rebuilt so as to be able to do it. The second is that there is both variation and agency in how incumbency presents in practice. The Gauteng Provincial Government held several key levers over Rea Vaya's implementation; it pulled some, refused to pull others, and found yet others to not be connected to anything.

Stepping back, we can see these as manoeuvres over institutional questions: who was to govern transport in the city (however defined); to what extent does the devolution of transport free the City from the control of the Province? In other words, these are manoeuvres of statecraft: Rea Vaya as policy and project as a means to reform institutions. Indeed in large part a means for one institution, the City of Johannesburg, to reform them in its advantage over another.

However these issues were comparatively small fry, as the statecraft of Rea Vaya goes. The Province was not just on the defensive in this process. It had its own transport megaproject, and with it a set of institutional reforms, that unfolded in parallel and in opposition to Rea Vaya. The next section will show how this project was part of an ambitious, determined, and coherent propositional project of statecraft on the part of the Gauteng Provincial Government; that advanced a directly alternative vision of the city's transport future; and indeed that argued for a fundamentally different answer to the question of "what is the city, and who governs it?".

The Gautrain and Gauteng City-Region

In 2000, the Gauteng Provincial Government announced the Gautrain Rapid-Rail Link as one of a set of large-scale investments across the province. After the 2004 announcement that South Africa was to host the 2010 soccer World Cup the project was elevated to national priority by hurried parliamentary approval (van der Westhuizen, 2017). This (only just) high-speed train now links Gauteng's three metropolitan municipalities of Johannesburg, Tshwane (formerly Pretoria), and Ekurhuleni—although the latter primarily through an airport link. See Figure 29 for a route map: each leg from the central bend extends into a different city. Further routes currently in advanced planning would expand the present 80km of track to a total of 230km. The public capital cost of the Gautrain reached approximately R28bn, or roughly a third of total national spending on transport (capital and operational) between 2005/6 and 2010/11 (Hunter van Ryneveld, 2014). In 2017/18 it provided 15m trips (or about 41 000 per day) at an operating subsidy of approximately R1,6m (Gautrain Management Agency, 2018).
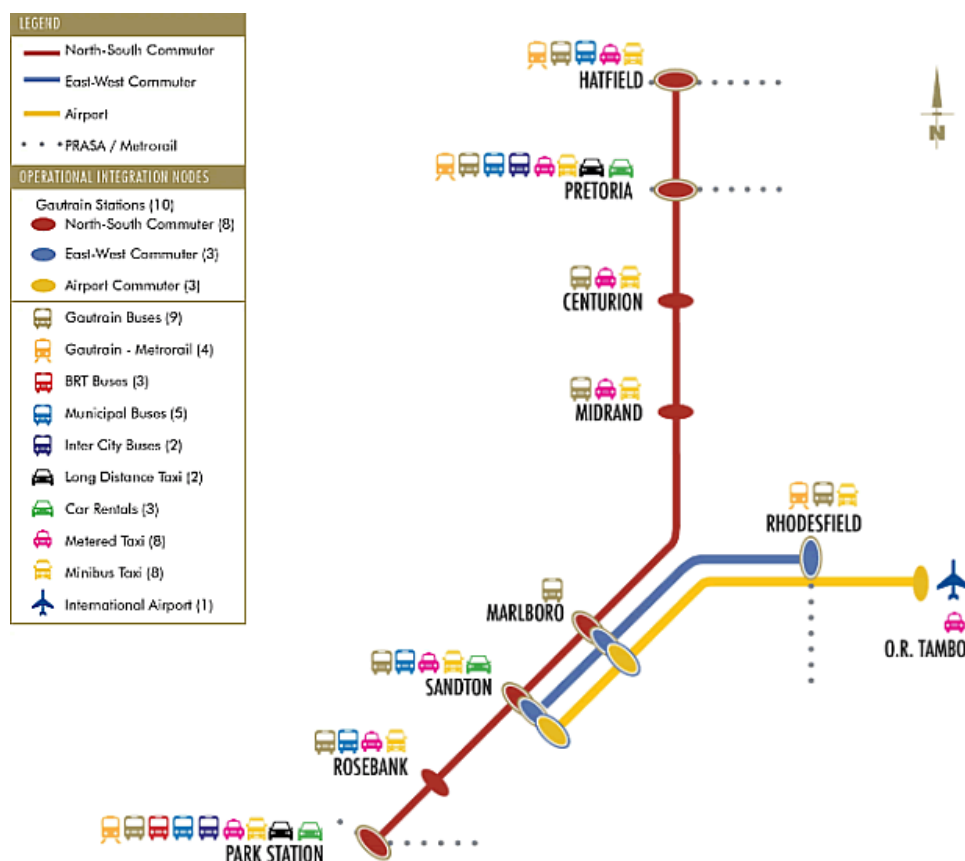

Figure 29: Existing Gautrain route map ("New routes planned for Gautrain expansion," 2019).

As Donaldson (2006) notes, the Gautrain was announced and planned in the context of the same spatial debates that produced Rea Vaya, regarding urban compactness, densification, and improved mobility using public transport. Early documents certainly refer to a proposed "corridor" of development along the primary initial route of Gautrain (van der Merwe et al., 2001).

In the early 2000s when planning for the Gautrain was underway, the Gauteng Provincial Government was also formulating the concept of the Gauteng City-Region (GCR; originally Gauteng Global City Region). This was never formally adopted as policy, but in various documents the provincial government advanced a vision of increasing integration first across the three metropolitan municipalities and later across the entire province (Gauteng Planning Division, 2016; Gauteng Provincial Government, 2006a). This is integration in a broad sense, meaning both spatial integration through better transport links and governance integration extending as far as new "city-region" (often just provincial) institutions (on which see Harber and Joseph, 2018).The first and to date most prominent of these institutions was an "urban observatory", proposed to provide the intellectual and data-analytic basis for city-region integration. I worked at the resultant Gauteng City-Region Observatory for two years immediately prior to beginning this PhD, including on a project called "institutionalising the Gauteng City-Region" (see Harber and Joseph, 2018).

The matter of institutionalisation was a core concern (in various senses) from the time the concept was introduced. The document "Gauteng City Region Road Map and Positioning" named as a key issue "consideration of institutional statutory measures to govern the Global City Region" (c. 2006b, p. 2). These earliest documents are consistently vague regarding what institutionalising the city-region would entail: "Effective partnerships and intergovernmental relations; Strong city regional institutional arrangements" (Gauteng Provincial Government, 2006a); "Appropriate institutional arrangements for decision making and co-operative governance" (Gauteng Provincial Government, 2005); and Figure 30 below.

What are some governance implications?

- Improved effective inter-governmental relations is critical.
  - Guided by a common vision of co-operative governance where the different complementary roles of the different spheres of government is spelt out
  - Such a vision should inform re-allocation of powers and functions in asymmetrical fashion where necessary and/or strategies of integration and alignment between spheres of government.
- The development of a single integrated governance system
  - Could be the logical result of expanded growth of a city region
  - Would be the most efficient way of supporting the successful development of a city region

Figure 30: Governance implications of the proposed Gauteng City-Region concept, 2005.[244]

Vagueness notwithstanding, coming as it did only five years after the advent of metropolitan local government this plan posed a substantial challenge to the nascent City of Johannesburg inter alia. As a study commissioned by the City said,

> the potential governance implications of an amorphous integrated city region could threaten the autonomy of individual cities in the province, as far as planning and self-contained visions are concerned; fundamentally undermining the vision of autonomous local government as contained in the Constitution and founding local government policy. […]

> Notwithstanding the importance of and opportunities for inter-governmental co-operation, it must be recognised that the [Gauteng City-Region] also brings with it the potential for conflict. This is not unique. It has been found in other [Global City Regions] that regional governments may emphasise [Global City Regions] as a

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[244] Digital file, "The case for building Gauteng as a Globally Competitive City Region" [Presentation], April 2005.

way in which to harness greater levels of political leverage (and potentially, associated budget allocations), often with personal or selected stakeholder interests at heart (Gordon, 2006).[245]

This was not an unfounded concern. As the GCR was developed as a theory and a plan, the Province grew more explicit about its view of Gauteng's institutional arrangements: "the adoption of a conscious strategy to develop a global city region in Gauteng may need to be accompanied by a massive administrative and institutional restructuring - as an option-, if it is to be successful."[246] Further:

> Gauteng as it is currently constituted is a relatively small region, but is one which is *over-governed in relation to its size*. This leads to duplication of responsibilities and activities, lack of co-ordination and integration etc. It is recommended that *either a Gauteng City State be formed, or that the provincial sphere of government is given only limited powers, with far greater devolution to local government.* This is in line with the original views of the relationship between the three spheres of government – strong national and local government, with less significant provincial government.[247] (emphasis added)

From the start, transport was regarded as key to the GCR concept.[248] This largely materialised as investigations and debates into the creation of a (possibly provincial) transport authority. This is a structure introduced by the National Land Transport Transition Act of 2000 which however made provision only for municipal or inter-municipal transport authorities (Cameron, 2005). It was also intended to be a metropolitan structure, that is governing an urban "functional area", and was therefore somewhat superseded by the Demarcation Act of 2000, which created metropolitan municipal governments such as the City of Johannesburg. These metropolitan municipalities in most cases obviated the major reason for a transport authority—coordinating

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[245] Digital file, "Global City Region Paper on Powers and Functions Between Spheres" [Draft], 2006

[246] Digital file, "Feasibility Study on Moving Towards a Metro Form of Local Governance in Gauteng Province, Phase 1 Report" [for Gauteng Department of Local Government], May 2007.

[247] Digital file, "Feasibility Study on Moving Towards a Metro Form of Local Governance in Gauteng Province, Phase 2 Report" [for Gauteng Department of Local Government], August 2007.

[248] Digital file, "Assessment of Powers and Functions – Preliminary Feasibility Studies: Selected Provincial Functions", December 2006.

transport planning across an urban area composed of multiple small municipalities. But in Gauteng, where three metropolitan municipalities and multiple local municipalities jostled in tightly-coupled economic and spatial integration, the idea of an overarching transport institution evidently retained appeal. The Transport Authority for Gauteng (TAG), after perhaps 15 years of false starts, was formally established in 2020, headed by the first and long-time head of the Gautrain project (Mthethwa, 2020).[249]

As Börger (2018) argues, the Gautrain was central to this agenda of city-region integration. As a transport project it links together the "core" GCR of the Johannesburg, Tshwane, and Ekurhuleni metropolitan municipalities, encouraging greater labour market integration and compressing the space of the GCR. The implementation of the Gautrain, initially undertaken directly by Gautrans, quickly demanded the creation of a new purpose-built provincial institution: the Gautrain Management Agency (not to mention the later Transport Authority for Gauteng).[250] This represented the development of enormous project management and transport capacity, and a reconfiguration of mandates and functions in the state. Börger identifies it as a shift of competencies from national to provincial level, and precedent for "increased importance of the province in the public transport sector towards a regional governance that exceeds municipal boundaries" (2018, p. 42). Or in the words of the Gauteng Provincial Government itself: "This project is an ideal opportunity for Province to be involved in a visible public transport project, and to implement government policy noticeably."[251]

In this way Gautrain becomes part of a larger question: that of the politics and institutional configuration of the state. It represents a claim to greater jurisdiction and authority over transport and urban governance. This is emphasized with ongoing planning for the expansion of Gautrain;

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[249] A fascinating study in incumbency in his own right. As a young engineer in the 1970s he led the construction of the highway system that came to define Gauteng; he spent time as an elected National Party politician and a senior bureaucrat under the ANC; he ran Gautrans for many years until stepping diagonally to run the Gautrain project full-time and see it from initiation to commissioning; and then back upwards to establish and run the Transport Authority for Gauteng. He is among the most significant engineers and transport figures in South African history. He did not return emails or multiple other requests for interviews.

[250] Interview with former provincial official, 19 November 2019.

[251] Digital file, "Gauteng SDI Rail Link Planning and Implementation Study: Inception Report", June 2000.

a more extensive network is planned to cover a great area including all of Johannesburg's major nodes. The Gauteng Provincial Government is therefore bidding to provide a major intra-municipal transport service, under cover of its mandate for *inter*municipal services. It already links the three major commercial nodes of Johannesburg: CBD (at Park Station), Rosebank, and Sandton, which together form the major intended backbone of Rea Vaya. See Figure 31 for the full proposed extension of Gautrain's footprint.

Proposed GRRIN Extensions – Phases 1-5

LEGEND

North – South Commuter
East – West Commuter
Airport
Phase 1
Phase 2
Phase 3
Phase 4
Phase 5
Metrorail

MAMELODI · HATFIELD · HAZELDEAN · TSHWANE EAST · PRETORIA · IRENE · CENTURION · SAMRAND · OLIEVENHOUTSBOSCH · MIDRAND · SUNNINGHILL · RHODESFIELD · FOURWAYS · O.R. TAMBO · LANSERIA · COSMO · MODDERFONTEIN · CRADLE · SANDTON · MARLBORO · LITTLE FALLS · RANDBURG · EAST RAND MALL · SANDTON 2 · ROODEPOORT · ROSEBANK · BOKSBURG · JABULANI · PARK

GAUTRAIN — FOR PEOPLE ON THE MOVE

Figure 31: Gautrain map including proposed extensions (labelled "Phases"), undated.[252]

In parallel to the Gautrain project, the provincial government also had plans for an even more brazen insertion into municipal transport.

> we were a couple of years down into implementing BRT and along comes (*pause*) one of the very strong MEC's [provincial ministers], who shall be nameless, and says we're implementing… (*sighs*) what do you call it? Monorails. (*laughs*) That's got to go right across everything else, and it's the best thing since sliced bread and so on and so forth. (*laughs*) Honestly.[253]

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[252] Every station south of Midrand and east of Modderfontein inclusive lies within the boundaries of the City of Johannesburg.

[253] Interview with former municipal official, 18 May 2018.

The monorail was to run over 44,7km from Soweto to central Johannesburg, presumably over a very similar route and for a similar purpose to Rea Vaya Phase 1A. It would cost R12b, four times the ultimate cost of combined Phase 1A and 1B, although somehow at no cost to the state due to private financing ("Gauteng to get R12bn monorail," 2007). It was backed at the highest levels in the Province, including by the Premier and the MECs for Roads and Transport, and Finance and Economic Affairs ("Gauteng monorail project derails," 2007). Gauteng's digression into the monorail and accompanying resistance to Rea Vaya lasted several months, with the City seeking intervention by the national government.

> Eventually [Executive Mayor of Johannesburg] Amos Masondo took all of us with him and we went to see Jeff Radebe who was the Minister of Transport and there was a huge thing too, absolutely. And this MEC, who shall remain nameless, they put all of us outside and he and Amos and Jeff had this huge bloody fight, and eventually after that he backed off and the monorails went away. (*laughs*) But it was about a 6 months' diversion. It was absolutely terrible. […]

> It was just telling the province to butt out. They had no function, legal function, to do this and just go away. If you can't help us, just don't harm us. (Laughs.) Basically. Oh it was terrible! It was absolutely terrible. [254]

The Province got as far as signing a memorandum with a Malaysian consortium with a track record of failure and bankruptcy, before the plan was put "on hold" eight days later by the national Ministry ("Gauteng monorail project derails," 2007; "Transport portfolio committee meeting: Minister of Transport on e-Natis and Gauteng Monorail," 2007; Radebe, 2007). It never resumed. What elevates this from being merely a curious episode is what it reveals about the Provincial Government's broader project of statecraft. It was to be the primary or sole institution of urban governance in Gauteng, notwithstanding the constitutional role of municipal government[255]; it had a project of statecraft to bring this arrangement about; and fitting the long prehistory of Gauteng recounted in Chapter 2, it would use infrastructure and specifically transport infrastructure as its means of statecraft.

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[254] Interview with former municipal official, 18 May 2018.

[255] And indeed national government's constitutional monopoly on rail transport. The Gautrain project had required a formal, partial delegation of this function to the Province.

The other key component of the Province's spatial vision was that of "mega human settle-ments", adapted from the national concept of the same name (Ballard and Rubin, 2017). These massive state-built housing projects, far from the urban core, are an attempt to synthesise the need to build housing at scale—historically done using cheap, poorly-located land and large turn-key projects—with an answer to the charge that such housing projects isolate residents and lock them out of urban economies. Although not directly linked in documents to the Gau-train, mega human settlements clearly follow a congruent spatial logic of distinct, distant nodes linked with fast transport; and they are juxtaposed as such in policy programmes or announce-ments:

> *Because we are building new cities, there is also a need to invest in more hospitals, smart schools and improvement of public transport, road (including new freeways) and other critical infrastructure.* The province has planned for eight hospitals to be built within the next two years. Twenty schools will also be built within the same period.

> *Currently the GPG is finalizing plans for the extension of the Gautrain system to new areas of the province to improve mobility*. (Mashatile, 2017 emphasis added)
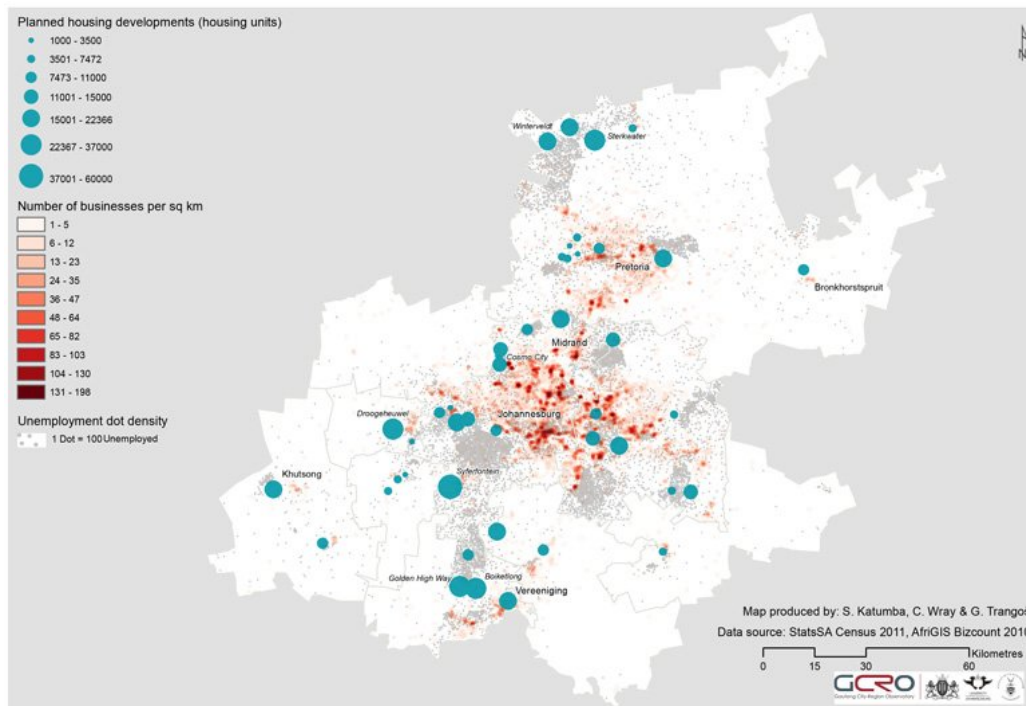
Figure 32: Gauteng's planned mega human settlements (Wray et al., 2015)

The mega human settlements have received attention in the academic literature, but again the Gautrain has not been closely linked to it either institutionally or in spatial logic (Ballard and Rubin, 2017; Cirolia and Smit, 2017). Ballard et al. (2017) point out that Modderfontein, a large private development resembling Gauteng's mega human settlements and adopted by Gauteng as such, struck a deal to provide a corridor for Gautrain in exchange for the rights to build a station. It is now visible in the planned Gautrain expansion map in Figure 32, represented by a unique symbol of unclear meaning.

Reading together Gauteng's housing policy of mega human settlements and its transport policy centred on the Gautrain, in the context of the overarching vision of a Gauteng City-Region, reveals both an institutional vision for the province and its cities, and a view of a profoundly different conceptual relationship between them. The next section shows how the Gauteng City Region and the City of Johannesburg Metropolitan Municipality represent competitive projects of metropolitanisation, each of which involved a sphere of government using a major transport project (inter alia) to assert its claim on governing the city.

Rea Vaya, Gautrain, and competitive metropolitanisations

Metropolitan government is premised on the idea that typical municipal boundaries, often hold-outs from pre-20th century government arrangements, are far too small to encompass the functional urban region of a city and therefore to effectively govern it. This functional urban region is frequently defined as the city's labour market—where people commute to and from regularly (Brown and Holmes, 1971; Krygsman et al., 2009; Mitchell and Watts, 2010; Nel et al., 2008). Storper adds the dimension of built environment: "functional urban regions capture the scale at which the strong economic effects of labor and land market integration are generated via intense daily labor market interactions and a functionally integrated built environment" (Storper, 2014, pp. 117–118). A metropolitan municipal government, therefore, is one that has been established to encompass a large portion (but realistically never the whole) of the city's functional labour market and a great part of its contiguous built-up area.

Metropolitan municipal government in South Africa derived from a different motivation: the need to sweep away the extreme iniquity of racialised local government, whereby municipalities were granted wildly different powers and funds depending on the race of their residents (having been homogenised by forced removals and residential restrictions. This transition was discussed

earlier in this chapter and also in Chapter 2. The City of Johannesburg as a result does not en-compass the entire "functional city-wide space". Figure 33 shows regular short-distance travel in South Africa, roughly corresponding to commuting, and the functional areas defined thereby. It shows intense integration across the entirety of Gauteng and beyond, enough so that Krygsman et al. (2009) define its functional commuter area as encompassing portions of North West Province and Limpopo that combined are about as large again as Gauteng itself. That said as Chapter 2 discussed, Gauteng's footprint does derive ultimately from earlier measures of its functional labour market, itself produced and consolidated by infrastructure development over the decades.
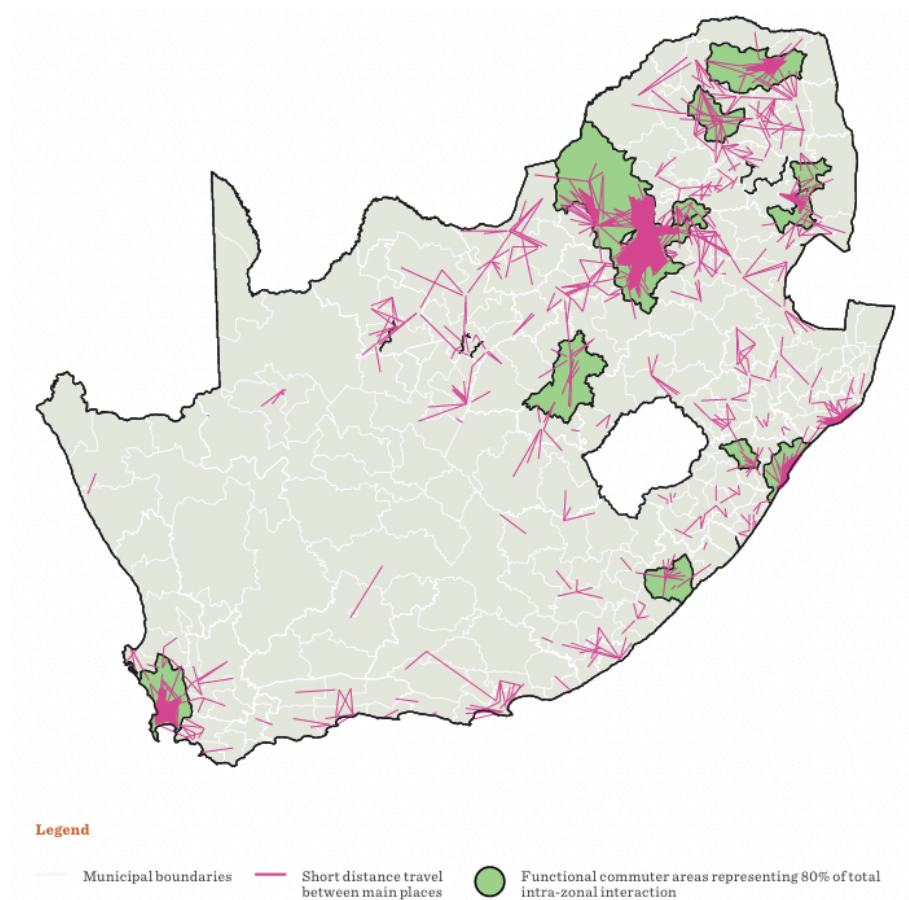
Figure 33: Functional areas of South Africa defined by short-distance commuting, adapted from Krygsman et al. (2009) in Harber and Joseph (2018).[256]

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[256] "Main places" are the largest sub-municipal divisions used for the national census.

The Gauteng City-Region, in this light, is a concept based plausibly on the underlying economic structure of the province's urban area. With a largely contiguous built-up area, albeit mostly at low densities, and a tightly-integrated labour market, the "urban land nexus" (Storper, 2014) of Gauteng is a large unified metropolitan area. That area is the "city-region". With the continuous regular movement of people through and around the province, there is a plausible claim that the appropriate scale of transport governance is at the city-region level. As Storper (2014) argues, there is no necessary correspondence between the various scales at which urban governance and public goods are delivered. However the intimate interrelationship of mobility and land use suggests that the former, too, could plausibly be best governed at the city-region level in Gauteng (Bertolini, 2012; Rode et al., 2014).

In short, Gauteng Province through the concept of the Gauteng City-Region, the city-region-scale transport system of the Gautrain, and the housing policy of mega human settlements dispersed across the province, is bidding for the "cityness" of the entire province. The Province advances a vision of the city that dissolves the boundaries of the already-expanded metropolitan municipalities in its ambit and elevates crucial questions of urban governance—transport, housing, and land use, to start with—to the provincial/city-region level. The Gauteng City-Region, therefore, represents a project of metropolitanisation to the scale of the entire province.

In a document quoted previously the Province's consultants argued that Gauteng was "over-governed", and offered two solutions: the "Gauteng City State", or a diminished provincial government and elevated local governments.[257] That document was itself a study on the "metro form of local governance": in short the amalgamation of all remaining local municipalities in the province into metropolitan municipalities so as to have a province filled "wall-to-wall" with metros. This would involve greater capacity, resources, and powers being concentrated in these new metropolitan municipalities, presumably to the diminishment of the Province. The Gauteng City-Region is instead the "City State" option: not the "metro form of local governance", but a metropolitan Province governing the city with which it is largely contiguous.

The Province was correct, in some sense, that a single functional urban region spreads across much of the province's territory. After all, that is the historical basis for its existence and

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[257] Digital file, "Feasibility Study on Moving Towards a Metro Form of Local Governance in Gauteng Province, Phase 2 Report" [for Gauteng Department of Local Government], August 2007.

jurisdiction as a province. However the *positive* observation that the city extends across the province should not be elided into the *normative* argument, implicit in the Province's policy actions, that spreading is a good thing. The Provincial Government's policies insist in so many words that the mega human settlements will be entirely new cities, built with sufficient density and economic prospects to concentrate activity, connected to one another by Gautrain and other rapid transport. However these policies taken together contrive to exert a centrifugal force on the city-region's development: deconcentrating the population, diminishing the existing urban cores, and further entrenching the long travels and travails of those living on the urban periphery (Harrison and Todes, 2017).

6.3. Conclusion

In Chapter 2, "statecraft" was defined as the pursuit of institutional ends by policy (or project) means. In very simple terms, this could entail building a train (for example) in order to advance a political-institutional agenda such as being the sphere of government responsible for running trains. As Cirolia and Harber say, "The state, here, is not unitary: the plurality and internal contradictions of the state and accompanying contestation are a central feature of statecraft." (2021, p. 3). Statecraft is the war of position between elements within and without the state over how governance happens and by whom. "Scalecraft" is a special case, whereby the processes of statecraft involve the reconstitution of the state at a novel scale (Fraser, 2010).

The institutional politics of Rea Vaya show these dynamics clearly. Rea Vaya was a means to consolidate the newly-metropolitanised City of Johannesburg and establish it as the paramount institution of urban transport governance in its territory. Even after the fact of state rescaling, this is an example of scalecraft and statecraft: building the bus system advanced Johannesburg's institutional claim.

This is not the only manoeuvre of statecraft visible in the project of Rea Vaya. National Treasury used the project, and the broader focus on urban transport, to claim greater space in national policymaking and extend its reach from simply gatekeeping finances to positively driving an urban agenda. Meanwhile the National Department of Transport used the myriad technical decisions involved in Rea Vaya to assert itself as firmly in control of the substance of transport policymaking. These are all manoeuvres recognisable as statecraft.

Finally the Gauteng Provincial Government has engaged in manoeuvres of its own. The Gauteng City-Region is an explicit attempt to rescale the urban state and to recraft it with the Province at its apex. The Gautrain was and remains a more or less explicit means to this end: "This project is an ideal opportunity for Province to be involved in a visible public transport project, and to implement government policy noticeably."[258] By targeting the major routes of Rea Vaya—CBD-Rosebank-Sandton to begin with, adding Soweto in the announced expansion—Gautrain is a direct challenge to the bus system, and with it the City of Johannesburg's claim to be the paramount institution of intramunicipal transport.

We thus see two clear examples of major transport infrastructure being used as means to institutional ends. Each of Rea Vaya and Gautrain was used to reconfigure the urban state and to advance claims by specific organs of state against others. Although this study does not extend to the present day, it is nevertheless the case that these claims continue to be advanced and these manoeuvres conducted. Thus in the words of Cirolia and Harber

> multifarious actors, within and without the state, in frequently shifting configurations, are all working on the state at once. Indeed, much of what appears to endure of the state from one period to the next might be seen as, not stability per se, but a dynamic equilibrium resulting from the application of force from many directions at once. (2021, p. 17)

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[258] Digital file, "Gauteng SDI Rail Link Planning and Implementation Study: Inception Report", June 2000.

7.   Nothing succeeds like institutional success

> Success is a journey, not a destination (ITDP's BRT Planning Guide quoted in
> Jacobsen, 2021a)

Whenever I mention studying Rea Vaya to someone who is familiar with the bus system or Johannesburg, the very first thing they ask is some variation on "how is it going?" I always struggle to answer, which I first interpreted as typical academic mealy-mouthness: "it depends". But the more I learned about Rea Vaya, and the deeper I dove into the granular details of its years and multiple sub-processes of implementation, the more I came to wonder about the extent to which "is Rea Vaya a success?", as I take such questions to mean, is even a coherent question. At least two authors share these concerns: "behind this rather obvious-sounding question [of success], there lies a seething mass of complex assumptions and interrelated concepts" (Cooke-Davis, 2004, p. 99 citing de Wit, 1988).

This chapter will examine the question of Rea Vaya's success in light of these complexities. When it comes to definitions of success the conventional "Iron Triangle" of on time, on budget, and to scope, predominates in the literature. This chapter will show that despite the unimpeachable common sense of this definition, it relies on shaky assumptions and inappropriate simplifications when applied to a project such as Rea Vaya. Trying to settle the question of an alternative totalising definition of success is beyond the scope and ambition of this chapter. Instead it will propose that, whatever broader definition of success is used, it must include consideration for the institutional outcomes of the project or state undertaking in question.

This is clearest when considering projects through the lens of statecraft. The positive claim of statecraft is that state undertakings such as projects or policy reforms are frequently if not typically means to the end of institutional reform; in other words that the proximate interests of actors are frequently in a more favourable arrangement of institutions, more than in the ostensible purpose of the institutions themselves. The claim advanced in this chapter is that this is as it should be; that is to say, state actors undertaking major projects—especially novel capital projects—should be largely concerned with creating institutional conditions supportive of the project's aims. This component of success does not lend itself to high-level summary or quantitative comparison across projects as does the Iron Triangle. It therefore requires different approaches and methods to understand the inner workings of a case and its greater consequences.

In the terms of institutional success, the chapter argues that it is not success on its own terms that matters the most for projects such as Rea Vaya. If one's concern is long-term benefits then Rea Vaya Phase 1A, or even the whole of Rea Vaya Phase 1, are not the relevant units of evaluation. They are mere components—indeed the very first components, the roughest prototypes—of an entire new transport system. This is not to say that judgement must be reserved indefinitely, until the system is complete; but that Rea Vaya's implementation to date must be judged for its contribution to the system to come. The most important contribution Rea Vaya could have made is the establishment of capable and durable institutions to deliver the rest of the system.

The chapter will then examine further details of Rea Vaya's planning and implementation to show that this was not the case. The implementers of Rea Vaya, out of haste and willingness to make pragmatic concessions to short-term necessity, variously neglected and undermined their own plans for an institution capable of continuing on the implementation of Rea Vaya.

Institutional success is not only valuable on its own terms; it is instrumentally important for more straightforward measures of project success such as the Iron Triangle. The chapter will close by examining Rea Vaya's ridership numbers and the proximate causes thereof, to show that failure to lay its own institutional groundwork led Rea Vaya to dramatically underperform on its own terms. This has been excused on the grounds that the project was and remains necessary, and that it is still ongoing. However these excuses would only hold water if the prospects of Rea Vaya were bright. For that to be the case, the project to date would have to have built an institutional machine capable of delivering those prospects. The chapter concludes that it has not, and this institutional failure must be counted prominently in any discussion of its broader evaluation.

7.1. Unsuccessfully defining success

> "…surely there can be nothing too difficult about measuring project success?"
> (Cooke-Davis, 2004, p. 99)

The conventional definition for project success is whether the project is delivered on time, whether it delivers the proposed scope of benefits, and whether it meets the original budget (Flyvbjerg, 2014). These three supposedly objective criteria are known as the "Iron Triangle"

(Pinto and Morris, 2004) and are so standard in the project management literature that they appear as early as Gaddis (1959) with neither citation nor justification; just as fact. This is the rubric used by Flyvbjerg with reference to large capital projects, typically infrastructure.

The Iron Triangle measures the outcomes of a project against some set of original objectives of time, money, and scope. As the case of Rea Vaya will show clearly, "original" is a shaky concept, perhaps even more so than "success". The earliest project documents are studies that are variously tentative, propositional, nominally "objective", or all-but-explicit exercises in persuasion. Flyvbjerg, now a prominent proponent of the Iron Triangle, showed convincingly in reference to a Danish bus interchange that the knowledge and data involved in policymaking is downstream from the power relations involved (Flyvbjerg, 1998). Gasper, reading Hirschman (2015 [1967]), argues that

> *ex ante* conceptions of costs and benefits are often part of bids for resources, made by potential 'doers' (executors) and submitted to prospective financiers. […] resources are being bid for, by words, and figures. […] they involve discretionary judgemental decisions and attempts at access, persuasion and leverage. (1986, p. 469)

Jacobsen (2021a) notes that the global BRT lobby uses a wide range of measures of success, several of which are consistently favourable in comparison to alternative modes: minibuses and light rail; this is likely not a coincidence. She also identifies the importance of a "strong and coherent" story to tell about BRT, to "generate trust" of the mode and its network of providers: "if a BRT system offers high-quality service, ITDP has done high-quality consultancy work; conversely, if there was no demand for BRT, there would be no demand for ITDP's services either. […] Equating 'DART' [Dar es Salaam's BRT] with 'success' meant that the success of DART became indisputable." (Jacobsen, 2021a, pp. 117–8)

As such, project outcomes are exercises in policy as narrative rather than science: "the evidence-informed policy maker is not an honest broker, dispassionately evaluating the facts, but a motivated salesperson, producing "policy-based evidence" guaranteed to support some preordained goal." (Bowers and Testa, 2019, pp. 529–530). This recalls strongly Roe's (1994) study of budgets as narrative exercises in persuasion.

Project outcomes also have a time-scale problem. As Bannerman says: "If we assume that a project is an end in itself, then its success can be determined at closeout stage. However, if it is a means to an end, then its outcome can only be measured at some time after the formal project has completed." (Bannerman, 2008, p. n.p.). This is the position of Ika (2018)—among others—who reads Hirschman (2015 [1967]) as arguing that project outcomes are frequently realised long after implementation is complete, while conventional project management approaches typically allow at most a year after project close to measure outcomes (Ika, 2018; Shenhar and Holzmann, 2017).

Of course this time-scale problem is due as much to the need to aggregate evidence as it is to understand a project on its own terms. An arbitrary one-year cut-off is long enough for the immediate costs and benefits of a project to show themselves, but not so long as to interfere with the exercise of comparing across a large number of projects. This is the project of Flyvbjerg, for example, whose business is primarily in measuring the frequency with which projects fall short of these criteria using large-n statistical analysis (Flyvbjerg, 2016, 2014, 2005). The problem with this approach was argued by Gasper (three decades in advance) to be insufficient, lacking in attention to the crucial internal details of specific projects. [259] This has been called the streetlight fallacy, after where the drunk looks for his dropped keys, or the McNamara fallacy:

> when the McNamara discipline is applied too literally, the first step is to measure whatever can be easily measured. The second step is to disregard that which can't easily be measured or given a quantitative value. The third step is to presume that what can't be measured easily really isn't important. The fourth step is to say that what can't be easily measured really doesn't exist. This is suicide. (Yankelovich, 1971, p. 26)

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[259] "lack of attention to programme operation, and concentration solely on programme outputs as judged by statistical analysis on large samples, may not be a good basis for understanding what is going on, and so for drawing conclusions. The combination of factors underlying successful cases might-in the absence of policy-be rare, so that successful cases are swamped by others. Inattention to programme processes then gives an objective, but possibly misleading, judgement of failure; and so on (Abt, 1976; Patton, 1978)." (1986, p. 472)

Cooke-Davis argues that statistical comparisons risk "the danger of what accountants call 'spurious accuracy' in quantitative research into project success" (2004, p. 110): the measurement and assessment each project's success is subject to enough contingency and uncertainty that aggregating them risks more noise than signal in the comparative study.

There are other approaches to the question of for how long to count benefits. For example Allport et al. (2008) include in their definition "durability success" for the ability of the project to deliver its intended benefits "over the medium and long terms. Durability success also relates to the suitability of the project development process (e.g. the procurement form) as a model to be followed on future occasions." (Allport et al., 2008, p. 20). This question of future procurement models is an essential aspect to institutional success, to be discussed shortly. Cooke-Davis (2004) argues for a higher "level" of success relating to consistency: "were the right projects done right, time after time?" This question is key to what I will call institutional success.

Some authors, starting with de Wit (1988), separate project management success from project success. Ika (2018) uses the distinction to show that the two are often uncorrelated (see also Baccarini, 1999). A project may achieve the "objective" measures of success that a project manager is concerned with, but do little good down the line; similarly a project may eventually realise great success despite abject failure in cost, timeline, or immediate benefits. This latter possibility was what Hirschman's (2015 [1967]) case studies found, which he attributed to resourcefulness and creativity on the part of planners and managers in the face of project headwinds. Based on his distinction between project management success and project success, de Wit argues that project success varies, not least by who is evaluating and over time. "Therefore, to think that one can objectively measure the success of a project is an illusion." (1988, p. 169). Dimitriou et al. (2013) find examples of transport megaprojects, "conceived as part of a wider strategic national and regional spatial as well as territorial development framework", that have been evaluated and found successful in those terms, when other evaluations using the Iron Triangle have named those same projects "disasters".

Overall, Ika's (2009) review of the project management literature finds that few authors spell out what they mean by success. Of those that do, the Iron Triangle criteria of time, budget, and scope stood unopposed from the 1960s until the 1980s, when stakeholder perceptions grew in prominence. Nevertheless, he finds that such "objectivist" approaches, as he calls them, still predominate. The remainder of this section will look at the conceptual difficulty of firmly

assessing even those objectivist criteria of the Iron Triangle, without even factoring in the time-scale problem. The chapter will then argue that when it comes to durability of success a crucial factor must be the institutionalisation of the project.

Projects within projects

To measure a project's success in terms of objectives or desired outcomes, there needs to be a definitive statement of those objectives. Flyvbjerg, for example, takes "final business case, i.e., the date of the decision to build" (2016, p. 182), as do Allport et al. (2008). Other objectivists may differ, but my argument here is not affected by precisely which statement of objectives or desired outcomes the one might pick as definitive.

Rea Vaya's business case is dated 28 January 2008.[260] It describes the project thus:

- Project name: Rea Vaya BRT System (Phase 1)
- Funding required:
    - Opex rev [revenue]: R 45m (Grants off budget)
    - Opex exp [expenditure]: R39.28m
    - Capex: R 2bn for Phases 1A & 1B (2007–2010); R 693,8m for Phase 1C (2010-2011).
- Key Milestone Dates
    - Start date [meaning operational start date, not project start date]
    - Phase 1 A – April 2009
    - Phase 1 B – April 2010
- Full Phase 1 in 2013
- Commission date: April 2009 for Phase 1A
- Duration (Months): 26 months from now (February 2008) until commissioning of Phase 1B in April 2009).

Under "Project objectives/Goals" it lists:

- "Having a world-class public transport system;
- Improving accessibility and mobility

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[260] File 04_06, Rea Vaya Business Case for Medium-Term Budget 2008/09-2010/11, 28 January 2008

- Reducing pollution and protecting the environment for all generations;

- Containing urban sprawl (spread of settlements) and promoting densification;

- Managing and reducing congestion (traffic jams);

- Promoting social inclusion instead of isolation; and

- Reducing poverty."

And under "Strategic benefits / Contribution to City's strategy and GDS [Growth and Development Strategy]" it says:

Contributions to the City's GDS will occur in the areas of:-

Pro-active absorption of the poor, where
- BRT will improve access to amenities
- BRT will contribute to more affordable municipal services
- BRT will create jobs

Balanced and shared growth, where
- BRT will lower costs of doing business
- BRT will Improve accessibility, mobility and connectivity
- BRT will create jobs.

Settlement restructuring, where
- BRT is the anchor and catalyst for the SDF [Spatial Development Framework]
- BRT will contribute to the redevelopment of under-utilised land, mixed-use nodes and housing in medium to high-density mixed income
- BRT will improve accessibility , mobility, connectivity, level of service and public transport supply

Sustainability & environmental justice, where
- BRT will contribute hugely to a reduction in harmful emissions
- Emissions savings will enable the City to apply for carbon credits from the Clean Development Mechanism (CDM).

Phase 1 BRT will create 51 724 jobs
- 46 210 job opportunities from construction or 11 000 person-years of work
- 5 415 operating jobs (stations and bus companies)
- 100 as system manager.

As far as reducing harmful emissions are concerned

- If only 15% of car users who live within 500m switch to BRT (and normal buses are used) 370 148 tons of C02 will be saved

- Detailed investigations by the CCI into still cleaner propulsion technologies (Ethanol) have estimated further savings of 158 000 tons of CO_2, 1557 tons of NOX and 43 tons of PM." (sic. emphasis in original).

This quote is lengthy but that is precisely the point. We can immediately see that the project objectives and desired outcomes are multitudinous, broad, and for the most part vague. The business case later specifies numbers of buses, number of stations, kilometres of infrastructure, and projected ridership for the system, all of which are themselves objectives.

We can see here what Gasper described, above, as "resources […] being bid for, by words, and figures. […] discretionary judgemental decisions and attempts at access, persuasion and leverage" (Gasper, 1986, p. 469) by "doers", the City's Transport Department, directed at prospective financiers, here the Mayoral Committee and particularly the Finance Department. Rea Vaya, even in its optimistic planning stages, was to be the largest capital expenditure in the history of the City of Johannesburg or its predecessor municipalities. A dramatic increase in expenditure was probably inevitable given the recent dramatically increased size and mandate of the cities in their 21st century incarnations, compared to before. This necessary expenditure was undertaken in an historical moment of fiscal abundance and post-apartheid ebullience. Nevertheless the sale had to be made, so to speak.

It is possible, however, that the Transport Department overstated their case. One account from in the room describes the City's Member of Mayoral Committee (MMC) for Finance and later Mayor, Parks Tau, assuring the Executive Director for Transport that the project would certainly be undertaken but questioning whether Rea Vaya was truly certain to cover its operational costs: not because the project's fate was in the balance, but to allow proper financial planning. The Executive Director was supposedly adamant: Rea Vaya's running would pay for itself (Graeme Götz in conversation, 2018). In other words the holders of the purse had already been convinced; the Transport department nevertheless insisted that BRT would go above and beyond.

Running without operating subsidy, while not flagged as an objective in itself, is a common thread from the original scoping study (and its drafters' prior sales pitches) through this

business case and beyond. In the business case's discussion of costs and benefits, it repeats that "At this [proposed] fare, and if the competing routes are removed as advised, it is estimated that even in Phase 1A, the proposed Rea Vaya BRT operational plan will generate sufficient revenues to cover all of its operating costs and the cost of the necessary bus procurement."[261] However this was almost immediately cast into formal doubt. An alternative study on the plans, commissioned by the Finance Department, concluded "there is insufficient basis to commit to the implementation of BRT".[262] This sparked tension immediately: the ITDP consultants leading the feasibility and preparation claimed that the Finance Department's estimates for compensating the minibus taxis specifically

> seem unreasonable and more about undermining the financial feasibility of the project than any reasonable attempt at identifying legitimate compensation claims. ITDP is concerned that this may indicate some efforts on behalf of parties within the Finance Department of the city of Johannesburg to benefit unknown special interests.[263]

My overall point here is that just as Rea Vaya was not sui generis, nor were its objectives or desired outcomes. At the definitive first moment of its "projectness" it was already reflective of a range of stated intentions articulated by a variety of actors to a variety of audiences. The SPTN and Integrated Transport Plan had been largely the internal products of the City's transport unit—not even a full department until 2005. The Scoping Study reflected the hard sell by the "BRT evangelical society" (Rizzo, 2017) to the City's most BRT-curious officials—primarily in the Transport Department as well as its political principal. That department then turned around and recommended those same objectives to the Mayoral Committee, seemingly receptive but less primed for BRT.

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[261] File 04_06, Rea Vaya Business Case for Medium-Term Budget 2008/09-2010/11, 28 January 2008

[262] Digital File, "An Evaluation of the Proposal to implement a Bus Rapid Transport System (REA VAYA) In the city of Johannesburg", c. February-March 2008

[263] Digital File, ITDP memo on implementation of Rea Vaya, 26 March 2008. The BRT team would later undertake their own exercise to estimate taxi profits, resulting in a range that included the Finance Department's estimate on the high end (Digital File, Memo on estimated taxi profits, 19 September 2009; Digital File, "Estimate of Existing Taxi Profits", 9 May 2010). An earlier 2008 exercise had produced a more modest estimate (Digital File, "Estimate of Existing Taxi Operator Revenues", 15 November 2008).

This is a specific example of a more general problem with treating as definitive any given articulation of Rea Vaya's objectives and desired outcomes: that the objectives were a moving target. Dimitriou et al. (2013) call these "emergent objectives". This is not only because of implementation setbacks, but because the very act of planning and implementing Rea Vaya was a learning process, the key informational inputs of which had to be generated as it went. The objectives from the business case, as will be clear below, were only a single version of the objectives of an evolving project.

Rea Vaya was and remains an iterative project whose implementation extended backwards and forwards from its original start and end dates. As discussed Rea Vaya was repeatedly described, including in key documents, as an adjustment to the implementation of the previous SPTN. Rea Vaya's scoping study includes the heading "SPTN upgrade to BRT" and is clear on the continuities: "For the most part, upgrading the SPTN plans to full BRT will not alter the basic premise of the overall public transport improvement efforts in Johannesburg." (ITDP, 2006, p. 22). Then, as the technical details of Rea Vaya came increasingly into focus, starting with the operational plan of 2007, Phase 1 (itself reflective of a larger, encompassing project) was split into "intermediate phasing (phases 1A and 1B) to help with implementation."[264] The business plan insisted that Phase 1A would be closely followed by 1B and 1C, and the whole of Phase 1 completed by 2013. This did not come to pass, with Phase 1C supposedly nearing operations at time of writing in 2023. The very nature of the Rea Vaya project was a moving target: by the conventional, firm definition, the Rea Vaya project is ongoing, even with its original scope. Were we objectivists we would therefore have to defer any evaluation of it until the full original scope is either launched or abandoned—which might never be the case.

We can see constant iteration and adjustment through the planning and implementation of the system. Rea Vaya's first Operational Plan was produced in May 2007 by Brazilian transport consultancy Logit, on contract to ITDP. This involved the first detailed demand modelling of the system—all estimates of demand hitherto had been much less sophisticated. Since demand determines both necessary system capacity and potential system revenue, demand modelling is conceptually prior to all detailed planning. This exercise therefore marked the first moment that

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[264] Digital File, Rea Vaya Operational Design. Final Report, May 2007

objectives could be set for the project that had been through a rigorous engineering exercise (setting aside how effective that exercise was).

The operational plan is very detailed: demand is modelled for each individual route and bus service, and buses and service levels assigned accordingly. See Figure 34 for one example of the 54 modelled trunk services and feeder and complementary routes. This level of detail was required to determine a precise level of service for the system as well as the system costs. In other words, to specify the core objectives of the project in terms of benefits and costs required gathering large quantities of information and then performing extensive technical work *during the course of the project itself*.

5.3.1. COMPLEMENTARY ROUTE C05

➢ Complementary Route connecting with the Civic Centre.

➢ It has a demand of 1,500 passengers boarding during the peak hour with a critical load of 470 passengers (see figures 5.3.1.2 and 5.3.1.3).

➢ It requires an operational fleet of 8 vehicles.

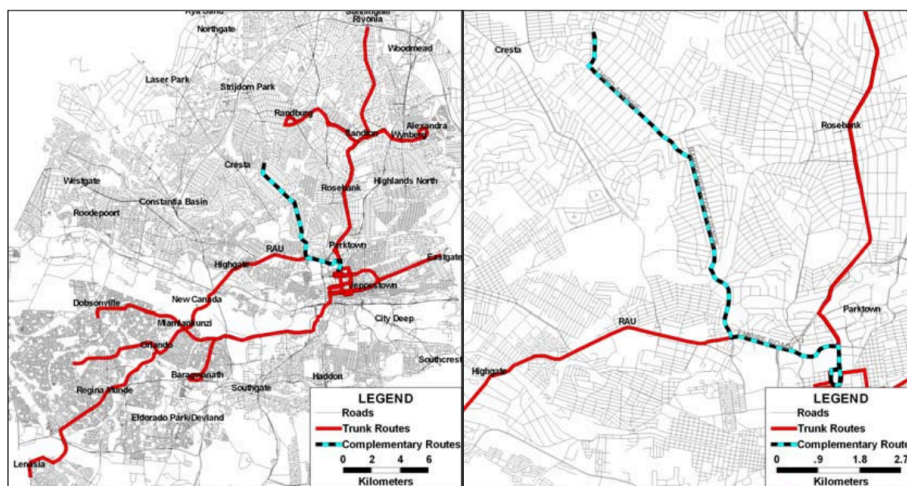➢ It has a cycle time of 52 minutes with a proposed operational dispatch frequency of 8 buses per hour.

Figure 5.3.1.1 - Complementary C05 - Overview and detail

Figure 34: Modelled demand and level of service for Complementary Route C05.[265]

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[265] Digital File, Rea Vaya Operational Design. Final Report, May 2007. In total 54 trunk services and complementary and feeder routes were individually modelled.

This is one reason why Flyvbjerg's conflation of "final business case" with "decision to build" (2016, p. 182) is a false one. In a project such as Rea Vaya, which like many major undertakings in developing countries was locally unprecedented, even the formal decision to build precedes by some time the fixing of project details. Detailed feasibility, technical, operational, and financial studies are needed to secure a project's specific objectives to a level of detail useful for later assessment. Whether those studies are conducted by consultants (as with Rea Vaya) or through a purpose-built bureaucracy (as had been the case with Gautrain), they require money. The commitment of that money—again, whether provided by the part of the state undertaking the project, grants from another part of the state, or donors—requires some sort of undertaking to justify, which the case of Rea Vaya shows us can be as much as a full "decision to build" long before anyone knows for sure what is to be built.

One might want to argue that this is just the making of excuses for poor planning: that projects' success should not be marked on a curve if their initial planning processes are vague enough, or slippage in the project allows planning do-overs like the successive operational plans described above. However, to argue that is to miss something fundamental about the way that locally unprecedented projects are planned and executed.

Poor planning

The poor planning argument might go: calling a document a business case when it does not inform the final decision to build simply means that you are doing things out of correct and rational order. Committing to a project based on the thinnest of "scoping studies" and later figuring out the difficulties is a mistake, and it is predictable that it would result, through sunk costs, political commitment, and bureaucratic inertia, in unsuitable projects for whom success will always be a distant dream (see Cantarelli et al., 2021, 2010 on premature lock-in). Indeed, these are the conditions in which the "Malevolent Hiding Hand" may thrive: wherein "ignorance, psychology, and power" result in a project whose "difficulties and costs… get optimistically underestimated, whereas creativity and benefits get just as optimistically overestimated." (Flyvbjerg and Sunstein, 2015, p. 985). This optimism may be "innocent and unintentional" on the part of planners, due to aforementioned ignorance and psychology, or "deliberate and calculated" where power asserts itself to get a project approved (Flyvbjerg and Sunstein, 2015). We might call this the "Have You Considered Planning Better" critique.

The first response we might note is that dismissing these phenomena as bad planning dodges the difficulty they pose for an objectivist measure of success. It suggests an ideal-type project whose planning and execution follow principles of rationality and linearity, and whose implementation challenges are either foreseen or nevertheless overcome with little deviation from the original plan. This concedes too much as an assumption underpinning an approach to project success: what use is a standard of success that can only be applied to the very best-executed projects? The problem is not that these definitions of success lead us to dismiss Rea Vaya as a failure, so much as they cannot establish a plausibly definitive statement of objectives and outcomes to measure success or failure against.

Dimitriou et al. (2013), based on a five-year study of 30 transport megaprojects, make a congruent point. As the project planning is an "open system", incorporating new information and adapting accordingly, so should evaluation of project success: it must be open and flexible to context and contingency, rather than rigidly "closed" as is the Iron Triangle. Closed-system planning means that "they *cannot* be adequately appraised as a constituent of the wider, and hence more complex, context into which they are placed" (Dimitriou et al., 2013, p. 16, emphasis in original). They argue that in between open-system planning and evaluation, project implementation must be a closed system to prevent costly changes to the plan. Choosing the moment to "lock in" is therefore a critical decision in project management.

There is however another layer to this, which is that project planners seldom have the luxury of making the key decisions prior to and abstracted from the social, economic, and political response thereto. It is not enough to thoroughly plan, consult, take advice, adapt to circumstances, if the underlying reality for which you are trying to plan is shifting as a result of project implementation—a problem whose scale reflects that of the project. A typical example is the announcement of forthcoming transport infrastructure raising property prices, which then affects the expropriation costs for land required to build that infrastructure. The clearest example in Rea Vaya is the taxi industry and Putco: the announcement and protracted planning of the Bus Operating Company induced changes in the organisational arrangements, businesses, and behaviour of the minibus taxi and conventional bus incumbents, as discussed in previous chapters, which in turn required adjustments to planning and implementation.

These dynamics necessitate an iterative project in which successive cycles of decisions, information gathering, refinement, and shifting conditions require flexibility and adaptation. A clear

example of that adaptation can be seen from the closure report of the GIZ project team that managed the first five years of Rea Vaya's planning and implementation. After the Phase 1 Operational Plan of 2007, the report notes that it further delivered:

- Revised Phase 1A Operational Plan and financial appraisal (July 2008)
- Revised Phase 1B Operational Plan and financial appraisal (November 2008)
- Revised Phase 1Operational Plan and financial appraisal (November 2008)
- Phase 1A Starter Service Operational Plan and financial appraisal (July 2009)
- Revised Phase 1B scenario testing (December 2009) […]
- (Revised) Phase 1B Operational Design (December 2010)
- (Revised) Phase 1C Alternative Alignments Assessment (December 2011)
- (Revised) Phase 1C Operational Design (May 2010)[266]

This is the process of iteration and learning made visible. Wood, in *How Cities Learn* (2022), focuses on the processes of policy mobility that conveys ideas and technical knowledge between countries and cities, while acknowledging the adaptation of those ideas to South African conditions. Elsewhere Wood focuses on the "repetitive" circulation of BRT ideas into the South African context and describes "the role of local conditions in the localization of international best practice" (Wood, 2015c, p. 578). But unlike the repetitive circulation of ideas, which gradually warmed South African cities up to BRT, the localisation of those ideas is treated by Wood as essentially a linear, rational, technical process: what can we use from Curitiba, and what must be changed? What we in fact see in Rea Vaya, as the first South African BRT and therefore patient zero of the local outbreak of "BRT fever" (Wood, 2014b), is that the importation of BRT was marked by repeated encounters with uncertainty, falsified assumptions, and new knowledge about local conditions—much of which was endogenous to the project itself. Indeed, a presentation from ITDP on a generic BRT planning process makes this explicit as early as May 2007:

> This is an iterative process. The operational plan gets developed. then it is checked by the business plan and infrastructure. Issues and problems will arise and they will be taken back to the operational plan to modify.[267]

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[266] Digital File, "World Cup 2010: Bus Rapid Transit System Johannesburg Training and Expert Programme. Final report", June 2011.

[267] File 30_17, "BRT Planning Process and Institutional Issues" [presentation], May 2007

The next section will deal with some of the institutional implications of these dynamics. For now, however, we can note the inadequacies of the approach of fixing a project's objectives before implementation, and measuring success against them in the year afterwards. It implies an ideal type of project, unreflective of the reality of projects such as Rea Vaya; it discounts to zero the long-term benefits that major capital projects are almost always intended to deliver; and altogether handwaves away too much complexity in its desire to compress these projects' characteristics into a form amenable to sweeping statistical analysis.

7.2. Institutional success

The core conceptual point of statecraft is that institutions are not always ends, and projects or policy are not always means, of political agendas. Indeed it is often the case that the project is a means to the end of institutional reform. In light of that we can consider what that conceptual reversal might mean for how we think about project success. In this section I propose that institutional capacity is an essential component of project success. This is not a definition in that it is not dispositive: we can allow that there are other essential and less-essential components that together may be used to define and perhaps even measure project success. It is also not a component in the sense of an input or prerequisite, as a steel chassis is a component used to build a car. Rather it is a constitutive factor of project success as judged after the fact, as others have argued (or more frequently presumed) with regard to delivery on time or on budget (on which see Ika, 2009).

By institutional capacity I simply mean the ability of the relevant institutions to deliver the project. To avoid circularity in logic or chronology, this might be thought of as the ability to deliver similar such projects; in other words, to do the project again. To understand why the next project casts success backwards at the last one, to so speak, we can consider the nature of public transport projects specifically, as representative of a (large) class of state undertakings that consist of many similar sub-undertakings. That is, programmes composed of many projects.

Institutional capacity is broadly neglected in the literature on the management of large state projects. This may be because much of the relevant literature is within the academic-practice nexus of project management, and as such represents the capacity talking amongst themselves. Insofar as institutional capacity is considered, it is frequently treated as a strict prerequisite of successful state projects. This is notably the case in the Transit Costs project, whose reports

argue that internal capacity, and especially internal technical capacity, is a major determinant of transport infrastructure construction cost (Goldwyn et al., 2020; Chitti et al., 2022; Goldwyn et al., 2023). They have elsewhere however defined megaprojects in relation to "local capabilities" as "institutionally new" unlike "non-megaprojects" (Levy, 2022), which suggests that such projects might inherently involve the building of institutional capacity.

Flyvbjerg (e.g. 2005; Flyvbjerg and Sunstein, 2015) treats institutional capacity as primarily a matter of individuals, through what I called in the previous section the Have You Considered Planning Better critique: project overruns and underperformance are due to mendacious or incompetent planners overpromising in their business cases. Hirschman (2015 [1967]), for his part, typically talks about "the project planners" in literal, that is to say individual, terms. He also speaks more abstractly of human creativity and resourcefulness in a way that could be applied in a holistic sense to institutions. Kassel (2010) defines the issue of public sector project management explicitly in the context of a "downsized", "hollow" state, whose capacity is limited. This is notable for internalising the question of institutional capacity—treating it as something to be factored into projects—rather than a strict prerequisite. His solution is for outsourced capacity to be carefully chosen and managed—Goldwyn et al. (2023) also emphasise the need for internal capacity to manage consultants—but the challenge of long-term management of the resulting infrastructure is reduced to dedicating sufficient funds to maintenance. He has little to say about durable institutions.

I propose another approach, closely related to urban statecraft. To recapitulate, Cirolia and Harber (2022 drawing on Lauermann, 2018; and Pike et al., 2019) theorise urban statecraft by treating the state not as unitary, or the "implementing agency" of a project as the primary agent. Instead, the state is an assemblage of institutional actors, variously formally defined and not, that pursue different political, institutional, and policy goals. These actors as a matter of course take it on themselves to act not only through but on the state, and the primary way that is done is by means of state projects. This is contrary to the liberal-rationalist view that treats policies or projects (good or bad) as the goal of state actors; and to a more cynical view that may treat projects as intermediate ends to further politics ("vanity projects") or personal enrichment. But Cirolia and Harber, writing specifically about urban transport, show that state projects are frequently if not typically a means to institutional ends. To belabour the point, they are used to *craft* the *state*.

Urban statecraft can be used to understand contestations over state power for its own sake, or for reasons that we might call empire-building. For example, it describes well the reconfiguration of transport governance in Dar es Salaam, as part of the Dar Rapid Transit BRT project, to disempower local elected municipalities and expand the institutional power of the Presidency (Cirolia and Harber, 2022; Klopp et al., 2019). It can also be used to show why an important, if not the most important, component of project success is the institutions built through it.

It is unusual for a major state capital project to be one-and-done, as opposed to one of a longer programme of similar projects. This necessarily includes urban transport projects which are typically built on a line-by-line basis—ex novo in Johannesburg, Bogota, Dar es Salaam, and Dhaka; expansions to existing systems in Boston, London, and Milan—but also extended programmes of dam-building (Swyngedouw, 2015), power plant construction (David and Rothwell, 1996), national road systems (Rose and Mohl, 2012), electrification or modernisation of electrical systems (Von Schnitzler, 2016), things of that nature. These all require a store of capacity to be built up so that the programme grows in efficiency, learns from mistakes, and preferably standardises designs and construction methods to maximise efficiency (David and Rothwell, 1996; Kim et al., 1990). A major, if not the major, determinant of reducing infrastructure unit costs is internalising engineering and administrative capacity within the state, and standardising contracting processes and technical designs (Goldwyn et al., 2020; Chitti et al., 2022).

Therefore the key outcome of the first project in that programme—the first BRT line, the first hydroelectric dam—must be the capacity to do the second one better and cheaper. Part of the cost of the first project represents school fees[268] for the projects that follow, in the sense that each project pays over the odds for mistakes and inefficiencies that may (or should) be avoided in future projects. Anzinger and Kostra (2017) call these "pioneer risks" which perhaps they are, but risks are to be borne and avoided while school fees are paid as an investment in improvement. Insofar as the first project predictably makes mistakes resulting in delays, cost overruns or benefit shortfalls, those too are school fees in kind, preferably not to be paid again in subsequent projects. An indefinite number of future projects is all but necessarily greater in potential benefit and potential cost than the single first one, even if it not otherwise treated strictly as a pilot project. The first project, therefore, is successful partly or primarily insofar as it spends well

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[268] As a former boss of mine would say.

those school fees and builds the institutional capacity needed for future projects and the ongoing management of its own product. As I quoted Cooke-Davis (2004) saying before, a key question of success is: "were the right projects done right, time after time?". Doing something time after time, that is routinising it within the activities of the state, is what institutions are for and what only they can do.

In other words, the first project is successful insofar as it is used to craft the state that is required for those future projects. This includes not only human capacity within existing or new institutions, such as transport planners or roadway engineers; but also relationships within and between institutions with respect to reporting, accountability, and the flow of money; the legal regime within which they operate; and the contracting arrangements and expertise in place. A corollary of this is that the greater part of the benefits of a project, crystalised in novel institutional capacities, are only realised through a programme of future projects.

Cohen, March and Olson (1972; see Kingdon, 1995 for a fuller version) argue for the "garbage can" model of policy, in which solutions exist largely independently of the problems they are designed or intended to solve. When confronted with a problem—or simply a social condition it intends to change—an institution typically does not go through a scientific process of rational study to find the best way to deal with it. Instead the existing repertoire of an institution, or of other institutions it has access to, is drawn on. A solution is pulled out of the garbage, having either served a previous purpose or indeed utterly failed to, and turned to the problem at hand. To torture the metaphor a little, institutional success consists of effectively building a recycling system: capacious storage for old solutions, arranged for future reuse or adaptation to new conditions. Rather than the chaos of the garbage can the project team can, and I argue should, make sure the solutions they have developed, typically at some cost, are as close to hand as possible—which means leaving institutions ready to and capable of executing them.

We therefore might phrase the institutional component (again, not definition) of project success as:

> *A state project is successful if its implementation increases the capacity of the state to implement future projects of a similar nature.*

Next, we shall look at the institutional workstream of Rea Vaya, to show how exactly these institutional considerations were integrated into the planning and implementation of the project;

and how, aside from their direct benefits and costs, this was the particular failing of Rea Vaya's first phases.

This is your bus on pragmatism

As discussed in the previous chapter, Rea Vaya was initiated among a large-scale restructuring of urban and transport institutions in South Africa. Much of this restructuring was predicated on the "transport authority", a novel model of local government institution that would aggregate most transport functions from local and provincial government, leaving the latter with only its oversight and regulatory functions. Transport authorities were created by the National Land Transport Transition Act of 2000 and reinforced in Gauteng by the Gauteng Transport Framework Act of 1998, the Gauteng Transport Infrastructure Act of 2001, and the Passenger Transport Act of 2001. Transport authorities, introduced effectively in parallel with metropolitan local government, were to be integral to the prospective devolution of national transport functions to local governments; indeed they were the envisaged centrepiece of the passenger transport governance system:

> implementation of the major part of the passenger action agenda will lie at the level of the local transport authorities. Capacity will need to be developed at this level transport planning, prioritising infrastructure investment (for all transport modes, facilities and local roads), contract management, service monitoring and enforcement of safety, car management and competition rules.[269]

The City of Johannesburg's iGoli 2010 and iGoli 2030 medium- and long-term strategy documents both called for the establishment of a transport authority to be considered; a sectoral report for iGoli 2010 noted that, in the absence of a transport authority, most of the City's land transport "would continue to be handled at a National and Provincial sphere."[270] iGoli 2030 said that all other questions of commuter transport were downstream from the question of whether

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[269] Digital File, "Towards the Development of a Policy Framework for the Assignment of Power and Functions to Local Government" [discussion document], January 2003

[270] Digital File, "IGoli 2010 Plan: Sectoral Report on Transportation", October 2000

a transport authority would be established or the existing institutions would remain.[271] The Integrated Transport Plan (ITP) of 2003 outright proposes, along with the SPTN, the establishment of a transport authority for Johannesburg, in a number of possible forms, over what it characterises as the "do-nothing" option. In fact the transport authority is in some ways the flagship proposal of the ITP, "to improve transport service delivery in the local sphere of government by grouping transport functions into a single, well-managed and focused institutional structure." (City of Johannesburg, 2003b, p. 538). The City budgeted R1.4m for the establishment of the transport authority in 2004/5 and planned to spend R50m on its operations between 2003 and 2008.[272]

We thus see, in the years before Rea Vaya, exactly what we have called statecraft: the use of a project—the ITP process and its list of transport interventions—to bootstrap an institutional reform. Indeed although the institutional reform was not a controversial one it was nevertheless an act of statecraft by a particular institution of state: the small Transport Planning and Management Directorate of the City of Johannesburg. The transport authority never came to pass, as discussed below, but the almost immediate elevation of the Directorate into a fully-fledged Department was explicitly a step towards it.

> The possible establishment of a Transport Authority – either for the municipal area of the City, or more likely, the broader Emerging City Region – also requires the City to prepare itself to play a leading role in this new era for Transport. As such, it is opportune at this change of Council, to start the new term [of office] with a Department or structure that will be able to move reasonably comfortably into the role of a Transport Executive for the new Transport Authority.[273]

As the SPTN gave way to Rea Vaya, the institutional objectives of the Department and the City shifted. Just as the bigger picture of Johannesburg's transport system was displaced by the implementation of BRT so were the larger institutional questions increasingly suborned to that of

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[271] as quoted in Digital File, "Towards the Development of a Policy Framework for the Assignment of Power and Functions to Local Government" [discussion document], January 2003

[272] File 34_24, Email on transport projects, 9 December 2003; File 34_09, Presentation on five-year transport budget 2003-8, n.d.

[273] File 37_01, "Transportation Business Plan", City of Johannesburg, 2006/7

"what institution is needed to implement BRT?". This was part of a larger process which might be called pragmatic haste. The speed with which Rea Vaya was to be delivered for political purposes meant that fundamental decisions were made only with the short-term delivery of the system in mind, regardless of their ultimate merits. This includes the institutional decision which, again, is the most important one for the ultimate goals of a transport system. There were three major concessions to pragmatism that undermined the effective institutionalisation of Rea Vaya.

The first concession was in the project structure of Rea Vaya itself. The international consultants who first proposed BRT had always presumed that the planning and implementation would be undertaken by consultants such as themselves—indeed actually by themselves—but were clear from the start that the process of institutionalisation would begin immediately. This would start with the appointment of a single director, preferably a government official, who "brings the individual consultancies together to form a virtual company. Then and only then, will the consultancies stop working like independent companies on different projects."[274] Rea Vaya's core project team ran to over 20 "international experts" and a handful of local consultants.[275]

There were almost no tasks in the planning of Rea Vaya that were not procured from consultants. Even the task of managing these many consultants was contracted to a Project Management Unit who in turn answered to a consultant project manager. There were at various points at least three consultants or teams of consultants dedicated to determining the institutional home of Rea Vaya. As a result, the capacity for rolling out a BRT system was easy come, easy go, with most capacity not being institutionalised. The plan for converting the project team into a durable institutional form was naïve given the project's reliance on international consultants, the fact that it was led by another consultant, and that the City's responsible official was on the brink of retirement (and did so in 2009). The institutional plan, such as it was, is pictured in Figure 35, and is not much more than a before-and-after organogram. This is not to say that no officials remained who were familiar with the running of Rea Vaya. There is however no question that the BRT was designed and planned (and as we saw in Chapter 3, implemented) predominantly by individuals and companies whose capacity would not be available for

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[274] File 02_14, "BRT Planning and Institutional Issues" [presentation], ITDP, June 2007

[275] File 06_20, Project staffing schedule, n.d.

institutionalisation. As a feedback session from the political principal of Rea Vaya put it, instructing the project team to focus on institutional matters:

> Rea Vaya if seen as a long-term project will always be involved in existing operations, planning of the next phase, negotiations, and implementation. There needs to be a team around the planning - financial and legal skills are required. There are questions about whether the [Project Management Unit] will suffice for the kind of work going forward.[276]

BRT PROJECT TEAM to BRT AGENCY
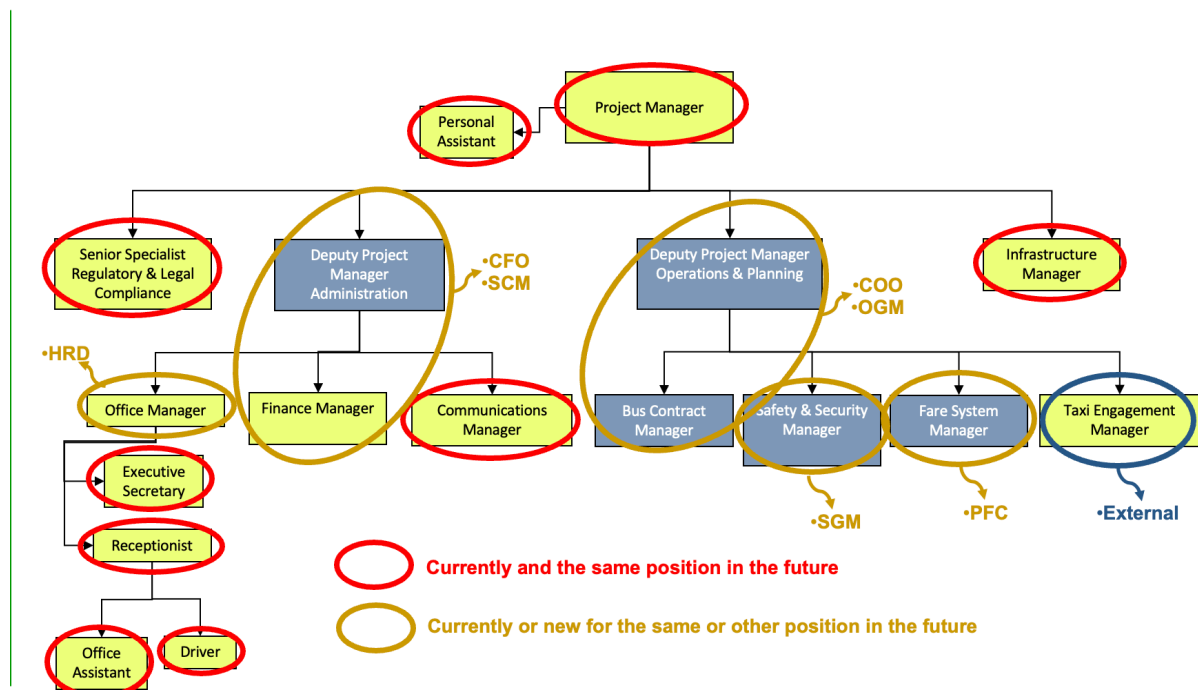
Figure 35. Transition plan from project team to BRT Agency, 2008.[277]

There is a degree to which this is a problem inherent to novel state projects rather than a simple error. The bind for a city (or any government) in Johannesburg's position is that without the internal capacity, that capacity needs to be procured externally—if necessary, internationally. Then, to squeeze as much value-for-money as possible from this expensive capacity, it must be

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[276] File 29_27, "Notes of feedback received on 31 August 2010 from MMC on various political meetings", 31 August 2010.

[277] Digital File, "BRT Agency Structure" [presentation], 16 October 2008.

dedicated to the delivery of the project. We might say that some portion of this external capacity should be used to train officials, but that presumes a minimum level of internal capacity able to absorb the technical and managerial knowledge. It motivates against implementing a project with the speed needed to meet an impending political deadline—speed promised by the international consultants—which all but necessitates purchasing capacity "off the shelf". It also motivates against the gratuitous importation of novel technologies or governance structures, whose merit needs to be weighed against the costs and difficulties of adoption. Bus Rapid Transit, as shown in previous chapters, is a technology with many moving parts, with many possible failure modes. The "BRT evangelical society" (Rizzo, 2017) and even more sober proponents dramatically underweight its risks when expounding its virtues.

The second pragmatic concession was to the corporatized structure of the City of Johannesburg and to the contract state. As described in Chapter 2, the City had been established in 2000 in the form of a corporate group, with the City itself responsible primarily for policy and oversight and most actual service delivery devolved to a series of Municipal-Owned Enterprises (MOEs) such as the Johannesburg Roads Agency, the Johannesburg Development Agency, City Power, and so on. Capacity and mandate for implementation of projects was therefore not housed in the Transport Department or indeed in any internal City department. Furthermore the relevant capacities and mandates were spread across multiple independent institutions with their own boards, their own service contracts with the City, and their own corporate interests.

In 2006 the Johannesburg Development Agency had an emerging reputation for delivering capital projects successfully. As a new institution with no core funding of its own it was also "hungry" for projects to cover its overheads, and pursued the contract to build Rea Vaya's infrastructure—bus lanes and stations. However the presumptive infrastructure implementer would have been the Johannesburg Roads Agency. The JDA won the contract on the back of its reputation, but to pacify the JRA the project team awarded it the extensive contracts for Intelligent Transport Systems—the abject failure of which was documented in Chapter 3.[278]

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[278] Interview with former JDA official, 23 May 2018.

A progress report by GTZ, through which were contracted the project manager, all the international consultants, and the "core" local consultants, summarised the byzantine project structure (see also Figure 36):

> The BRT project team comprises some full-time city staff namely the BRT project manager, and three staff members responsible for legal matters, infrastructure and finances respectively, plus some administrative staff. The Johannesburg Development Agency, a city company, is responsible for the infrastructure design and construction, and has contracts with several civil engineering consulting firms, construction contractors, public involvement consultants, environmental consultants, and architects (for stations, termini and depots). It has several project managers working full time on the project. […] The Johannesburg Roads Agency, another city company, is responsible for the Intelligent Transport Systems (ITS) procurement including the automatic fare collection system (AFC). Some City Department of Transportation staff provide support to the project, and also manage the consultants who are engaged with the taxi industry engagement process (facilitator, technical adviser, office manager and fieldworkers) and the consultants engaged in the training workstream. The City's Department of Environmental Management is carrying out the baseline study to support the Clean Development Mechanism (CDM) application.

> A marketing and communications firm manages the website, media liaison, and marketing and communications. A legal firm provides probity services. A local law firm is drafting all the contracts, and another law firm was engaged to compile the proposal for the institutional arrangements and its staffing. Various other City departments play a supportive role on the project.

> The GTZ consulting team provides consulting services and support in the form of a full-time project manager located at the BRT offices, and the services of some 20 local and international consultants who work on location as well as remotely, on about 12 different project workstreams.[279]

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[279] File 15_09, "Progress Report No. 8 for the period January, February, March 2009", March 2009

Current Rea Vaya Structure
Significant accountability issues
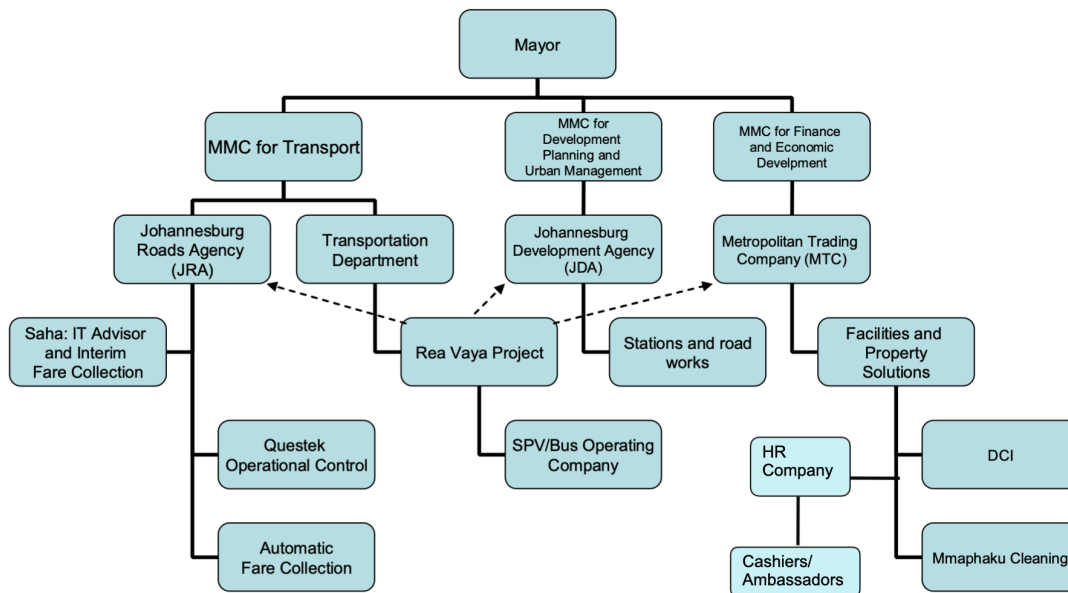
Figure 36: Overall contractual structure of Rea Vaya, 2009.[280]

This complex set of contracting relations across a wide set of contracting agencies represented one problem generic to the delivery of BRTs, and one particular to South Africa and specifically Johannesburg. The generic problem was that the many tasks involved with planning and implementing BRT were spread across an incredibly wide area, with entirely separate teams and contracting structures working on interdependent issues. This is not a problem of vertical spread— subcontracting and sub-subcontracting is typical in many fields—but horizontal spread across many institutions with varying lines of reporting.

The particular problem relates to the contract state that is South Africa, discussed in relation to New Public Management in Johannesburg in Chapter 3 (Brunette et al., 2014; Chipkin and Lipietz, 2012). In short, so much of the activity of the South African state has been resolutely contracted to private service providers that the state itself has come to resemble little more than a vast contract-management apparatus. This itself represents a de-institutionalisation of state capacity since even the core functions of government—such as policymaking and

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[280] Digital file, Presentation to project evaluation, October 2009.

regulation—are served by private actors on contract, who as a result develop the corresponding skills, expertise, and latent knowledge for which the state must pay every time it needs them. This is compounded in Johannesburg by its corporate structure, with relatively autonomous institutions wielding different mandates and functions and a rump City bureaucracy exercising oversight and nominal coordination.

The confluence of these two dynamics in Johannesburg—contract state and municipal corporatisation—produced what Harrowell (2018a) calls "Coasian hell". Johannesburg's corporate structure particularly, but also the positive case for the contract state such as there is, relies on Coase's (1937) argument that any institution could be regarded as an assemblage of contracts, and that institutions exist only because they are more efficient in terms of transaction costs than the individual contracts to which they are logically equivalent. In Harrowell's telling, the rise of management consulting in the 1980s turned Coase's descriptive statement into a normative one, prescribing that institutions concern themselves only with their "core business"— whether it be making either widgets or policy—and contract out everything else.[281]

The term transaction costs does not do justice to the situation that results from the decomposition of—in this case—a municipal government into a cluster of companies, and the contracting out of many or most of those companies' actual activities. In some cases, Rea Vaya line items were deliberately broken into separate contracts "so as not to have too many eggs in one basket".[282] On top of transaction costs measured in terms of time and money, there is the enormous administrative overhead of the complex system that results. This is Coasian hell, when the dense knot of contracted relationships produces multiplicative if not exponential problems of contract management, monitoring, and enforcement, and compounding downstream problems of substance.

This was clearly on show with the procurement of the ITS system in Chapter 3. To recap briefly: the Johannesburg Roads Agency was side-contracted by the City of Johannesburg to deliver the Intelligent Transport System (a loose term for all digital components of Rea Vaya, including ticketing, control centre, and digital tracking and performance management of buses) under the

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[281] We might note, without comment, that the business model of management consultancy itself depends on organisations contracting out some or all functions.

[282] File 10_32, Presentation on lessons learned, n.d.

instruction of the privately-contracted Rea Vaya team. Both sides of that contract had their own contracted advisers on the ITS system and how it should be designed. The JRA had its broader mandate to fulfil, to which end it intended to deploy technological upgrades to traffic management and a new control centre; these were folded into the contracted task of Rea Vaya's ITS and control centre—a textbook synergy that a system like this is supposed make possible. JRA appointed contractors to design the tender, and then appointed a contractor to deliver the ITS system and control centre, who themselves subcontracted to a set of companies. For reasons of its own institutional weakness, the JRA's tender was badly specified, the chosen contractors unsuitable, and the contract mismanaged, resulting in a failed Rea Vaya ITS workstream.

It took many months of the Rea Vaya team to even understand the extent to which the process had failed, and that investigation and the subsequent rectifications had to happen through various mediating institutions and political intervention, since the JRA was a separate organisation. A similar story, less dramatic, occurred with the station management contract run through the Metropolitan Trading Company. This is of course before there is any question of coordination between different municipal entities—for example, when ITS failures (JRA) combined with staffing issues (MTC) to produce mass ticket fraud. The arms-length relationship between different parts of the City of Johannesburg produced a clear failure mode—Coasian hell—into which Rea Vaya quickly fell.

There is a link here to Hirschman (2015 [1967]) on the emergence of unanticipated creativity and resourcefulness in response to unforeseen challenges in project implementation. This presumes an agent or agents in a position to wield creativity and respond to challenges, which Hirschman personalises in the form of individual project managers. However the operative agent is, in large projects, the institution, its aggregated resources, and its capacities for creativity emergent from the individuals within. A functional institution is able to operate as greater than the sum of its parts; this is lost when it is decomposed into those parts. Contracts between institutions can be specified to a reasonable degree when the terms are fixed, which requires a measure of certainty; they are a poor tool in matters of uncertainty or unforeseen situations of the sort that Hirschman rightly points out are frequent, if not typical, in large projects, and in response to which we might hope for resourcefulness and creativity to emerge (Harrowell, 2018b). They are also a poor substitute for the sort of durable relationships offered *within* institutions.

This should not be read so as to damn all contracted services. Coase's (1937) argument, contra his management-consulting interpreters, was that the right institutional design, with thoughtful and deliberate aggregation and decomposition of functions, was necessary. That may be a composite of both—municipalisation of some parts of the system, contracting out of others. But it cautions very strongly against maximalist decomposition of institutions, and indeed to any degree more than is strictly necessary, given the steeply rising marginal costs in money and complexity of each additional contractual relationship.

An argument against decomposition was made, not in quite these terms, by Rea Vaya's own international consultant on institutional arrangements: "It is essential to define the scope of this BRT Agency, because of the importance that it should completely concentrate on the BRT project without any other duties or responsibilities."[283] The same person put it even more forcefully in an email:

> Exception Europe and US and maybe Australia, where the BRT concept is complete different that the concept that we are using in our countries, there are two kinds of BRT:

> There are BRTs in operation and there are BRTs on the files. And the 99% of the BRT in operations, they required a special BRT Agency. And one of the main important issues because the majority of the BRTs are on files, it is because the government thought that it wasn't necessary create one BRT agency.[284] (sic)

The third pragmatic concession to the haste of the project was a basic neglect of the long-term institutional question. After a promising start—from the first presentations on institutions by international experts[285] to an institutional workstream inaugurated at the start of the project,[286] an institutional expert appointed from the jump,[287] and an initial budget of around R4m[288]—the

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[283] Digital File, "Institutional Structure of Agency", 17 July 2008.

[284] Digital File, Email from international consultant, 16 October 2008.

[285] File 23_05, "Participation of operators and citizens in BRT projects: lessons from Transantiago", 21 April 2008.

[286] File 30_07, GANTT chart for GTZ support programme, October 2007.

[287] File 30_11, Schedule of experts, 16 August 2007.

[288] File 06_25, Initial project resourcing schedule, January 2008.

question of how to govern Rea Vaya was repeatedly considered and set aside for a period of years.

In March 2008 it was anticipated that the institutional design would be complete by that December, and the institution formed or reformed by September 2009. An initial institutional design was produced by the appointed international consultant by July 2008 and amended through December 2008. However increasingly over that year the project team's attentions were dominated by the intransigence of Gauteng Provincial Government over environmental approvals, early and growing ITS issues, and the ongoing discussions with the taxi industry which in turn was delaying bus procurement. Steering Committee and Management Committee minutes do not mention the institutional workstream until August, and then only to report on a relevant change to national legislation and to advise that the workstream would continue.

Section 78 of the Local Government: Municipal Systems Act of 2000 requires a formal process to assign or reassign municipal functions, and a consultant was appointed in September 2008 to conduct the necessary study.[289] In the February 2009 Management Committee minutes it was reported

> that after much discussion it has been agreed that they should not at this stage identify the "home" of the BRT entity. It was decided that other issues needed higher priority at this stage, that is, the staffing needs of the BRT Unit and to re-look at the so called investigation, that is, where do we go from here as far as the investigation is concerned. He advised that we need to interface with much more internal and external participants.[290]

The resulting "amended" report from the consultants was tabled for approval in an April 2009 Mayoral Committee meeting and recommended only that a Business Unit—that is, a financially ringfenced internal structure within the City—should manage Rea Vaya through Phase 1A while

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[289] Digital File, Mayoral report "Commencement of Process to Determine the Institutional Structure for the Rea Vaya BRT Project", October 2008.

[290] File 06_03, "Minutes of Rea Vaya BRT (Bus Rapid Transit) Management Team (BMT) meeting", 27 February 2009.

the Section 78 process to find a permanent home continued.[291] The same Mayoral Committee report requested permission to start capacitating the business unit—an extremely last-minute undertaking given the imminent anticipated launch of Phase 1A. By 20 August 2009, at the end of which month Rea Vaya was obliged to begin operations by the terms of the bus financing, candidates for "high level posts" and technical posts were still to be interviewed and station staff were awaiting appointment.[292]

In October 2009, after the first month of operations, the Rea Vaya team underwent an internal review by the consultancy it had newly appointed to study the institutional question. This review found that "Institutionalization of the BRT business was not designed at the beginning. So the result is that we only have approval for a partial structure which is not enough to run the business." [293] Furthermore:

> **Inter-Agency relationships and agreements**
> - Inter-Agency agreements – not all agencies pulled in same direction. Why: inter-personal politics and agendas;
> - BRT entities and concept of Agencies not well explained to all stakeholders to identify all role players;
> - Inter-Agency – Departments kept changing representatives on Rea Vaya forum – no handover to new representatives. Why: not all Departments saw project as a priority;
> - Inter-Agency agreements – need to be strict, explain what is expected from the consultants so as not to have them slack. Why: because their poor performance puts a strain on other motorists on the road due to traffic lights not working;
> - Inter-Agency agreements resulted in fragmentation of responsibilities towards BRT project as a whole;

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[291] Digital File, Mayoral report: "Progress Report on the Investigation into the Appropriate Institutional Structure for the Rea Vaya BRT Project and Approval of the Organisational Structure for Phase 1A of the Project", 16 April 2009; Digital File, "Section 78 (1) Report 1: Assessment of the Appropriate Institutional Service Delivery Mechanism for the Rea Vaya Bus Rapid Transit System", February 2009.

[292] Digital File, "Minutes of Rea Vaya BRT (Bus Rapid Transit) Management meeting", 20 August 2009.

[293] Digital file, "Rea Vaya Review Session", October 2009.

- Inter-Agency agreements not easily enforced/enforceable. Why: blurred reporting lines;

- Inter-Agency agreements were not completed timeously and that lead to uncertainty and lack of commitment; and

- Inter-Agency co-operation was lacking as people viewed Rea Vaya as a purely transformational project.

Systems, structures and processes […]

- Project per se can not easily be accommodated in City of Johannesburg Transport. Rea Vaya Operating Company will function better as an MOE with business principles as drivers. Final decision not been made – City's politicians not convinced;

- BRT entity within the City – did not lend a sense of ownership of the "business entity";

- The current institutional identity of Rea Vaya "hamstrings" the "spur of the moment" or urgent taking of decisions and the execution thereof, that is, there is too much municipal red tape which could be improved by a corporate structure;

- At some time an Agency of the City will have to be created – this should be put into embryo and developed into a City Agency along the way;

- Successful BRT modules regarding City Agencies and monitoring structures should be obtained and tailored to fit Rea Vaya needs;

- Project structure fragmented, confusing roles and responsibilities (overlaps), poor communication (remote locations);

- Current organogram approved not suitable for business of Rea Vaya - needs additions of HR, asset management, marketing, and IT. Original design concentrated on operations and finance and administration, did not foresee operations as a business but rather as a project;

- BRT entity not properly/adequately structured – quite a number of things fall through the gaps;

- Undefined roles and responsibilities resulting in contracting and litigation risks due to lack of capacitation;

- Other role player's roles not clarified. Why: probably because they were not involved in the planning; […]

- Establishment of body to run with the project/programme and its legal form. Why: delay in reaching an agreement with the taxi operators; […]

- Slow institution set up due to cumbersome processes resulted in disintegrated operations;

- Construction awareness to communities was disjointed. Why: too many service providers involved with no clear reporting lines; and

- Lack of accountability of contractors due to lack of monitoring capacity and mechanisms.[294]

I have elected not to excerpt from that quote or even highlight key lines since it is such a comprehensive and concise illustration of the dynamics described. As it shows, and I argue, the institutional workstream and indeed the very question of who and what would run Rea Vaya was repeatedly set aside in favour of more immediate concerns of implementation. The result was an ad hoc and undercapacitated structure, inadequate to the task of running Phase 1A not to mention the task of planning and implementing further routes and phases.

What is clearly visible over at least the first five years and two subphases of Rea Vaya is that the institutional question was repeatedly set aside as a concern secondary to more urgent matters of getting the infrastructure built and the buses running. From what resulted it is clear that this was a false pragmatism. By deferring the big question of how the system will be managed and extended it produced a series of institutional kludges at precisely the time when the project needed to be building the institutional basis for its future success. Indeed it is in those periods of urgency and pressure that statecraft is most available as a tool: the propulsive force of the project opens institutional possibilities that may otherwise have remained shut.

None of this is to say, however, that the concrete material benefits of a state project such as Rea Vaya are irrelevant. The next section will deal with Rea Vaya's ridership—variously projected, measured, and failed-to-be-measured.

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[294] Digital file, "Rea Vaya Review Session", October 2009.

7.3. Objective success in the wild

We have ridden this far without dealing with what may be considered the central question of Rea Vaya: does anyone use it? I have until now tried to show that there are other interesting questions besides, and worked through some answers. Now we turn to the question of how many people were projected to use Rea Vaya, and how many use it—both of which turn out to be unstraightforward to answer.

As discussed above, the 2007 Operational Plan involved the first formal analysis of potential demand for Rea Vaya. Its forecasts were reproduced exactly in the Business Case: see Table 12 and Figure 37. Note that the figures are cumulative: the passenger figures represent the total ridership forecasted for the system after implementation of each phase. This corresponds to the integrated nature of the system: it would, in principle, neither know nor care which phase (route) a passenger was traveling on, charging them a single fare based on the distance travelled. Note for example that Phase 1C was projected to have a relatively modest effect on total daily passengers and boardings, and involves many more new kilometres than buses. Since so many of the riders of Phases 1A and 1B were traveling onwards to Sandton, 1C would less attract more riders than keep the existing ridership on the existing buses for a much greater distance.

The plans for 1A and 1B were officially approved in September 2007. However, by August 2008, "although there is total commitment to trying to achieve the full Phase 1A delivery in May 2009, there is doubt that it can be achieved in its entirety."[295]. Phase 1A was revised and the scenarios modelled for its new scope abandoned the ridership ambitions of before in favour of the narrow short-term needs of a) demonstrating the potential of the future system, and b) serving "the needs of the 2009 Confederations Cup as far as possible."[296] The five scenarios forecast ridership of between 49 000 and 69 300 per day on the revised Phase 1A, compared to 262 000 on the

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[295] File 02_04, "Report on proposed amendments to Phase 1A of the Rea Vaya Bus Rapid Transit (BRT System)" [Mayoral Committee Report], 7 August 2008.

[296] File 02_04, "Report on proposed amendments to Phase 1A of the Rea Vaya Bus Rapid Transit (BRT System)" [Mayoral Committee Report], 7 August 2008.

original operational plan.[297] The recommended scenario was the next-to-most ambitious of the reduced services, involving 128 buses at an increased vehicle occupancy achieved by reducing seating to 47% of vehicle capacity. It was projected to carry 65 600 people per day.

Table 12: "Summary figures for the various phases of Phase 1, together with forecast patronage and numbers of buses", 2008[298] (sic)

	Pase 1A	Phase 1B	Phase 1C
Kilometers	40	86	122
Conventional BRT Stations	41	97	150
Terminal Stations	3	5	8
Depots	3	4	6
Total daily passengers	262,000	391,000	430,000
Total daily boardings	448,776	748,323	843,646
Total buses for the system	640	1,129	1190

Due to the protracted negotiations with the taxi industry the City missed its May 2009 deadline. A reduced "starter service" began operations on 30 August 2009 with paid services commencing the next day—the bus financing agreement had imposed a hard deadline of the end of August. The starter service's trunk route involved 28 buses and an additional 12 on a single inner-city complementary route. In September 2009, the daily total ridership on the trunk service was 11 820 rising to between 15 000 and 16 000 per day by mid-October 2009.[299] Ridership on the complementary route was negligible and service was soon withdrawn.

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[297] Some documents refer to ridership per day, some per weekday (assuming higher ridership than weekends). The document quoted below uses both. I have taken each document at its word, but it is possible that some "days" refer to "weekdays" which affects the specific estimates at the margins. It is also not clear whether "per day" averages only over days of service (Monday-Saturday) or Sundays too.

[298] File 04_06, Rea Vaya Business Case for Medium-Term Budget 2008/09-2010/11, 28 January 2008.

[299] File 15_11, GIZ Training and Expert Programme progress report, July-September 2009.

Passenger numbers held steady until a May 2010 expansion of the 1A service with two new feeder routes and a revised inner-city service.

> In the first week of May [2010], passenger trip numbers averaged about 28 000 on a normal weekday (compared to the April average of 23 000 passenger trips a day). There were also strikes by Metrorail and Metrobus workers in May which caused the average weekday passenger numbers in that month to rise to 34 000 people.

> Figures were much lower however in June, when they decreased to 460 000 trips for the whole month [around 20 000 per day] while normal services were disrupted by the World Cup. They began picking up again in July and August (to 540 000 and 550 000 respectively).[300]

There were separate strikes by drivers and station operators in September 2010, reducing ridership. Passenger numbers increased gradually over the second half of 2010 and the first half of 2011: see Figure 37 below. However, "It is believed that actual passenger numbers are about 25% to 30% higher, because fare evasion may be high."[301] A fare increase at the end of May 2011 does not appear to have significantly affected ticket sales at least in the short term. In November 2010 the average weekday ridership was 26 000.
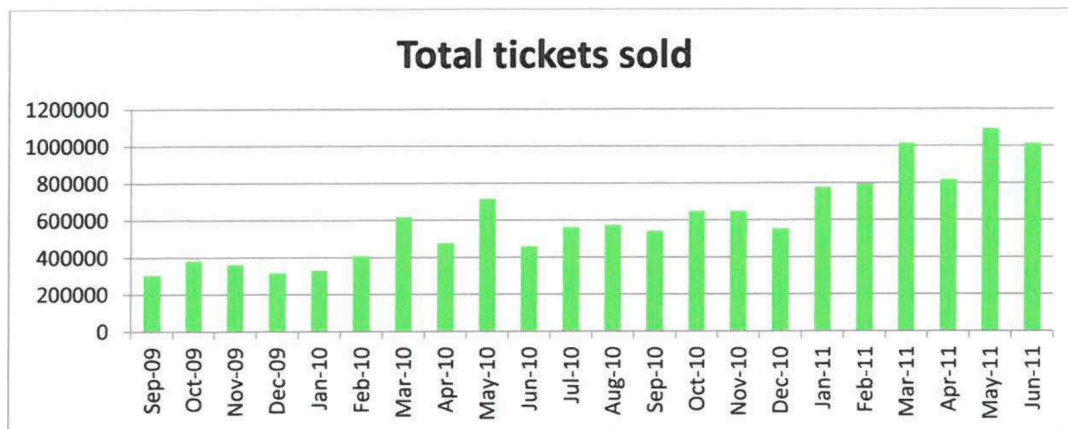
Figure 37: Rea Vaya tickets sold per month, September 2009-July 2011.[302]

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[300] File 15_14, GIZ Training and Expert Programme progress report, April-June 2010.

[301] File 15_17, GIZ Training and Expert Programme progress report, October-December 2010.

[302] File 19_03, "Report on some Indicators of Rea Vaya performance", June 2011.

By May 2011, average daily ridership had reached 42 120 largely due to the steady expansion from the starter service to the full Phase 1A with complementary and feeder routes. [303] This stayed remarkably steady until June 2013, when ridership was 42 000.

On 1 July 2013, the paper flat-fare tickets were replaced with the benighted and long-delayed Automatic Fare Collection (AFC) system, as discussed in Chapter 3. This allowed the introduction of the intended distance-based fare. The AFC had immediate, catastrophic effects on ridership.[304] There were 18 000 smartcard tap-ins for July 2013. By March 2015 tap-ins had still not reached the prior numbers of ticket sales with approximately 35 000 tap-ins per weekday.[305] It took until the 2016/17 financial year for Rea Vaya to meet and exceed its June 2013 peak, with 51 389 journeys per day (City of Johannesburg, 2017). [306]

A formal review of the fare system commissioned from the World Bank found a series of technical and structural failures. The full findings with respect to implementation problems runs to four pages, but broadly fall under the following categories:

- Technical challenges due to the use of EMV cards and failures of implementation.
- Failures of system design including rigid rules for minimum balances, high recharge fees, and inflexible fares failing to take into account passenger needs.
- Payment evasion and illegal ticket sales, driven both by the technical failures of the system and by systematic evasion by riders and workers:

    According to Rea Vaya staff, fare evasion also appears to be systematic. The extent of the fare evasion is unknown and no proper studies have been done to understand its magnitude, but on one occasion a Rea Vaya exercise using visual counts identified what appeared to be a fare evasion of 80% on a single route (F11 route); anecdotal evidence from the staff tends to confirm that payment evasion

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[303] Author's calculations based on figures in File 19_03, "Report on some Indicators of Rea Vaya performance", June 2011.

[304] Interview with former national official, 4 May 2018.

[305] Digital File, World Bank, "Rea Vaya Fare Collection: An Assessment of System Design, Implementation, and Operation", 9 March 2015.

[306] The report in fact doesn't specify the term over which those journeys occur, just "Passenger journeys", so this is inference.

is quite prevalent. The payment evasion problem is in fact related to the many operational challenges, as they have led to a growing user dissatisfaction that validates fare evasion and seems to encourage cashier, drivers, and passengers alike to game the system.[307]

What we see here is the revenge of the institutions: inattention to the institutional structure and consequences of Rea Vaya, severely curtailed the material benefits of Rea Vaya in the form of ridership. Furthermore it made it impossible even to quantify those benefits accurately, since the data to do so comes from within a particularly broken institutional nexus within Rea Vaya. In short, pursuing institutional success may not only have resulted in a more functional institutional arrangement for the ongoing Rea Vaya project and programme; it likely would have improved its success in objectivist terms as well.

7.4. Conclusion

The post-Phase 1A institutional story, in brief, is that another consultancy was appointed in late 2009 to pick up the institutional workstream. Another new consultancy was appointed to run the Project Management Unit at the end of 2010, with tasks including managing the Rea Vaya Business Unit (still within the City) and work on the future institutional structure.[308] It managed the transition of the Rea Vaya business unit into its "final institutional form", the Scheduled Services Management Agency (SSMA) which kept the same status within the Transport Department but absorbed the Metropolitan Trading Company, its staff, and its responsibility for Rea Vaya stations (a responsibility later contracted to the Johannesburg Property Company).[309]

The "final institutional form" of Rea Vaya, entirely contained within the Transport Department, is as follows:

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[307] Digital File, World Bank, "Rea Vaya Fare Collection: An Assessment of System Design, Implementation, and Operation", 9 March 2015.

[308] File 13_04, "Establishment of Project Management Unit for Rea Vaya BRT System" [letter], 26 November 2010.

[309] File 12_13, "Transportation 2nd Quarter Report for 2012/13 Financial Year: (October to December 2012)", 6 February 2013.

- The SSMA is responsible for the operations of Rea Vaya, with Rea Vaya's costs and revenues remaining on the books of the City of Johannesburg Transport Department.
- The Directorate: Planning and Policy plans new routes and services.
- The Directorate: Business Services is responsible for "transformation", that is negotiation with the taxi industry, and the formation of Bus Operating Companies.
- The Directorate: Infrastructure builds and maintains Rea Vaya infrastructure.
- The Directorate: Finance manages revenue, collects fares, and budgets. (Seftel, 2017).

Of these, "Only SSMA is 100% responsible for BRT. Other Directorates have other functions" (Seftel, 2017, p. 52). This is not in itself an unacceptable institutional form for Rea Vaya, although it is notable in that Rea Vaya is now the only operational function the City serves itself rather than through an MOE. It however runs contrary to the strident advice given repeatedly to the City that the BRT needed significant, dedicated capacity, not just for operations but for the planning and execution of future phases.

I have in this chapter argued that contrary to conventional definitions of project success, the specific performance of a project is less important than its institutional legacy. This is especially true for the inaugural project of a programme, where the hardest lessons are likely to be learned. I therefore proposed the following definition of institutional success:

> *A state project is successful if its implementation increases the capacity of the state to implement future projects of a similar nature.*

If the test of the institutional legacy of a project is the successful delivery of future projects in the programme—as I propose it is—then it is hard to call Phase 1A of Rea Vaya an institutional success. Rea Vaya ridership—insofar as it can be measured—has been flat for ten years. As the infrastructure in that time has been expanded the benefits-to-cost ratio has therefore plummeted. As for implementation times, Phase 1B—originally supposed to be part of 1A, operational in 2009— began operations in 2015, delayed by major challenges with the ITS system and particularly negotiations over its operation model. These were the same challenges met by Phase 1A. At time of writing in 2023, Phase 1C—also part of the original 1A plan—has not yet begun operations, although last year it was announced to be imminent. Whatever the Rea Vaya

project has accomplished, it does not include a strong institutional foundation for the future of BRT in Johannesburg.

8. Transport and the form of the state

The Rea Vaya project was an enormous undertaking by the nascent City of Johannesburg, broadly supported by the only somewhat more established post-apartheid national government. The City had a fractured urban space to govern, a fractious recent origin story, and a fractional base of policy on which to build. Rea Vaya inaugurated a wholly new period and mode of metropolitan municipal intervention into urban space.

The apartheid state had been explicitly and deeply concerned with the governance of space and mobility. What is more, this governance of space was in service of explicit, identifiable, and coherent economic and social aims. In comparison the post-apartheid state's relationship to space and mobility is not as clear; nor is the connection between space, mobility, the economy, and other aspects of society. Nonetheless there remains a complex mix of institutions to govern space and mobility, some inherited from apartheid, some derived from apartheid but since reformed, and some entirely new—including the enormously costly and significant interventions into space and mobility such as Rea Vaya.

The problem, therefore, as laid out in Chapter 1, is how to make sense of the relationship between state projects and the form and nature of the state. This thesis has undertaken an intensive case study of a single project (or programme, not to beg the question) which was not only locally unprecedented but grew from a period of rapid state reform and itself imposed novel institutional demands upon the state. This case study of Rea Vaya has therefore tried to answer the following questions:

- How has the implementation of Rea Vaya affected the institution that undertook it: the City of Johannesburg?
- How has the implementation of Rea Vaya affected the larger state of which the City of Johannesburg is a part?

To this end, it took on a set of intermediate questions. What does such a project demand from the institutions of the state? How does the state produce or secure the novel capacities it needs to undertake the project? What does such a project reveal about the nature of the state and its relationship with society? What conflict is produced, within and without the state, by these institutional reconfigurations? How, in light of all this, does the state succeed at these

undertakings, and the institutional reconfigurations they require? How should we think of success in this context?

8.1. Urban statecraft through the ages

To begin to answer these questions, Chapter 2 introduced the concept of urban statecraft. Rooted in the work of Bulpitt (1983) and more recently of O'Brien et al. (2019a) and Pike et al. (2020; 2019) urban statecraft proposes the state itself as an object of policy and state projects. More than that, it proposes that such crafting of the state plays a crucial role in the process of state undertakings. States do not just enact policy: their structure is a major end to which policy is the means. The state is "a work in progress, constantly being (re)made as actors attempt to cohere and stabilize its structures and devise and implement its imaginaries, strategies and projects" (Pike et al., 2020, p. 794).

I followed Cirolia and Harber (2021) in using the concept of urban statecraft, rather than city statecraft or municipal statecraft as used for example by Pike et al. (2019). This is to distinguish from the latter's focus on the institutional arrangements of local government. The urban state, in contrast, is the entire institutional edifice concerned with the governance of the urban scale. It can encompass some or all of the institutions at the local, provincial/regional/state, and national levels. This is not a superficial distinction: the reconfiguration of the state between such levels, and creation of state institutions at novel scales, is visible and significant when studying the governance of infrastructure; most especially transport infrastructure in Africa (Klopp et al., 2019). Such "scalecraft" is a form that urban statecraft frequently takes, and is visible in both the historical and recent history of South Africa.

A particular project of this thesis was to ground statecraft in a more developed theory of the state, and a broader theoretical framework and social ontology. For this, I turned to the regulation approach, a critical realist approach to analysing institutions and their development. The regulationist account of self-contradictory regimes of capitalist accumulation, partially and temporarily stabilised by accompanying modes of regulation, provides a basis for a sophisticated and nuanced theory of institutions at all scales. This theory is based on overarching theoretical principles with wide (not to say universal) applicability, but leaves room for great empirical diversity and contingency. In understanding the mode of regulation as an institutional regime including but not privileging the formal state, the regulation approach offers a bridge between the

more granular and agentic theory of statecraft and a broader material and structural social on-tology.

Its base fortified, the concept of statecraft could sally forth. The mode of regulation can be understood as the broadest conception of the integral state (Gramsci 1976): the full institutional complex responsible for regulating society. This allows for an accordingly integral concept of statecraft, whose insights can be applied far beyond the nominal boundaries of the state. Indeed it is at and just beyond those boundaries that many battles of statecraft are so vigorously fought. As shown later in Chapter 2, the institutional reconfigurations of the post-apartheid era included a project to redraw the boundaries of the state, integrating some functions and (more often) expelling others into a parastatal market of private actors. It is this statecraft of the interface between public and private sector, formal state and market actors, that shows up repeatedly through the first half of the thesis. It is only with a concept of statecraft ontologically broadened by its grounding in the regulation approach that these processes can be fully made sense of.

To make the concept concrete, and by way of necessary background to the study, the remainder of Chapter 2 recounted a history of South Africa, Gauteng Province, and the City of Johannesburg, read through the lens of urban statecraft. This history focused on those dynamics visible in and relevant to the urban history of South Africa, and particularly urban transport. Starting most broadly with South Africa in 1948—the election of the National Party and advent of apartheid—it showed how successive national regimes of spatial governance created the urban form of Johannesburg as at the end of the century. This form was and to a large degree remains characterised by an insidious combination of urban sprawl and racial segregation, not just unjust but marked by "spatial mismatch" (Budlender, 2016) that represented the problem statement, as it were, of transport policy in the new City.

More narrowly, the history of the region that became the province of Gauteng is where the institutional-infrastructural relationship, not to say dialectic, is most starkly visible. A region largely created by an "infrastructural fix" (Tonkiss, 2015) to the problem of distance between administration, economic activity, and water supply, developed various institutions of regional governance as a result. These institutions built more infrastructure to knit the region together, itself requiring increasingly coherent governance culminating in the establishment of the

Gauteng Provincial Government. This is a vivid example of how infrastructure is used to create new scales of governance.

Finally, a history of what became the City of Johannesburg shows not only a process of state-craft but the intensity of political contestation that surrounded that statecraft. The very form and nature of Johannesburg was a major political question over the course of the 1990s, and the way that question was answered—unitary metropolitan government, with a fragmented, "cor-poratized" internal structure—would play a significant role in how Rea Vaya was planned and executed a very few years later.

8.2. The object that is the state

This case study set out to make sense of the relationship between state projects and the form and nature of the state. What it showed, most directly in Chapter 3, is that the nature and form of the state is partly determinative of the form that large state projects take. Metropolitanized local government, arranged along New Public Management lines into quasi-independent corpo-ratized entities, positioned in a broader government system in nominal coequality with provin-cial and national governments, produced a BRT project whose form and trajectory reflected those conditions. It was funded by intergovernmental grants and guided by national policy; planned under the aegis of the core City of Johannesburg, but in actuality by consultants of the type that the state is almost entirely dependent on; and its implementation was divided be-tween City entities depending on a combination of their formal mandates, their "corporate" track records, and their ability to manoeuvre against one another. What Chapter 3 also revealed was the contradictions inherent to this system and the challenges they represented to the plan-ning and implementation of the project.

This was not, however, a one-way relationship. The state stared into the project, and the project stared back. Immediately upon undertaking the project of Rea Vaya, the state began a process of reconfiguration that allowed it to do so. This involved reforms planned as part of the project, but also reforms in response to challenges that arose as well as those driven by manoeuvring of institutions within the state. These reforms were a mix of intentional and inadvertent. Seen at the institutional level, Rea Vaya was a project to turn the City of Johannesburg into an institu-tion with the capacity and mandate to govern transport across the urban scale, through major capital works and sophisticated operations. Insofar as it represented the first such major project

by the City, or indeed by any of South Africa's new metropolitan municipalities, it represented the attempted consolidation of these novel institutions as the paramount institutions of urban governance. In the event this consolidation was partial and problematic, leaving the question of urban governance in South Africa somewhat more open than it may otherwise have been. Rea Vaya also represented projects of statecraft to the many other institutions involved, all of whom encountered Rea Vaya as either an opportunity or a challenge for their positioning within and with respect to the state. These dynamics were explored most thoroughly in Chapters 6 and 7, dealing directly with the institutional politics of Rea Vaya.

A narrow concept of statecraft can focus on processes occurring within and between the formal institutions of state. Chapters 4 and 5 showed that institutions beyond the state narrowly defined—even institutions so far from the state as to sit substantially outside the law—can also be analysed as objects of statecraft. In South Africa—not uniquely—much of the business of state is conducted in a parastatal manner, by private and quasi-private organisations in various relationships of funding and control by the state. If from one day to the next Joburg Water contracts out the reading of water meters, the meter reader—perhaps the same person performing the same job and function—remains for all purposes an agent of the state.[310]

Rea Vaya, like other BRTs, was approached partly as a process of negotiated re-regulation of the relationship between the state and two major incumbents in the transport industry: the minibus taxi industry, and Putco (Dewey, 2016). Each existed as a privatised form of public transport created by state policy to serve the spatial order of apartheid. Each operated outside the state, at least somewhat outside the legal order, and in varying degrees and forms of tension with the state. The Rea Vaya project had the public goal of bringing both institutions fully into the state system as fully legalised, contracted operators, and thus of progressively eliminating their extra-systemic, or informal, aspects.

The counterparties to this statecraft each had their own agendas regarding their integration into the state system. Each, in different ways, set out to preserve and capitalise upon their own incumbent positions. As described in Chapter 4 the taxi industry initially dismissed the overtures, preferring their minimally-regulated, autonomous status. When brought over by the prospects

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[310] The question of whether such parastatal private companies are bound by the constitutional obligations of the state that contracts them is a matter currently under discussion in South Africa.

of profit it exercised the power it collectively held within the transport system, its relationships in national politics, and violence to secure a sinecure contract with guaranteed profits that more or less strictly added to rather than displaced its incumbent position. Putco, for its part, fought to get *into* the relationship with the state that Rea Vaya represented, although not on the terms it was offered. This was described in Chapter 5. It also fought against the diminution of its incumbency entailed by the surrendering of routes until ceding narrowly on that point. It nevertheless maintained, at the point of a judge's gavel, its incumbency in the broader system against all challenges thereto.

Read separately and together these contestations were about distribution of rents and profits, degrees of regulation, and private claims on the state. They were also negotiations over the nature of the interface between the formal state , organisations (prospectively) contracted to perform functions of the state, and the broader social-regulatory institutional mileu. Cirolia and Harber (2021) describe the degree and nature of regulation of popular transport as a site of statecraft, not least because it strongly affects the behaviour of state actors such as the police who enforce, or selectively enforce, those regulations. We see something very similar here. The taxi industry came around to negotiating an entry into the state-provided transport system. Putco negotiated an exit from its place in the system and re-entry on new terms. All parties, including on the state's side, were therefore contesting the form of the state at its boundary made up of publicly-funded privately-provided services.

8.3. Statecraft outside of Johannesburg

Turning back to the state narrowly defined, Rea Vaya also became a site of contestation over the relationships between parts of the South African state as well as a vehicle for various reform agendas. Rea Vaya was rare among major transport projects in Africa as squarely a municipal undertaking, and by virtue of that reinscribed South Africa's new constitutional principles of subsidiarity, devolution, and empowered local government. This is not to say that the City of Johannesburg was left to the task. Chapter 6 showed that from the beginning existing institutional politics played out through Rea Vaya and new political contestations were generated.

The national government played key roles in enabling and encouraging Rea Vaya. In the first instance this meant receiving the BRT evangelists and spreading their gospel. National Treasury was building a new framework for municipal finance within the bounds of the new constitution;

to this end it built up its own capacity to understand and oversee urban fiscal policy—extending its reach into and reconfiguring its relationship with the relevant sector departments. It also used a tax windfall to introduce new grants flowing directly from national to local, for the first time bypassing provincial government. These grants encouraging policy devolution and public transport specifically. This process was "hijacked" by the World Cup[311] which smoothed the fiscal way but shifted focus and priorities. Nevertheless, in the machinations around how Rea Vaya was paid for we see the National Treasury carefully reconfiguring the state and its fiscal processes according to its institutional agenda.

The National Department of Transport's institutional agenda was not so explicit. However the major thrust of its interventions pursued the principle that while spending and implementation may have in this case been devolved to the City, the National Department would jealously guard control over planning and policy. Looking to Rea Vaya as a model for propagation across the country, it imposed a series of design decisions on the City reinforced partly by the conditionality it placed on the infrastructure grant. The Department's views on engine emissions standards, seating arrangements, and bus turning radii—to take a few examples—were put forcefully to the City and later encoded in binding national regulations. Chapter 6 dove deeper into the choice of ticketing technology, demanded by the Department over general advice. These interventions forced cities and other municipalities, if they wanted access to the only transport-dedicated infrastructure grant, into expensive and technically complex design decisions that are implicated in serious policy failure (discussed in Chapters 3). However they successfully asserted the National Department's role in directing transport policy to the most granular level.

Finally the National Presidency pursued its own agenda with major public concessions to the taxi industry, entirely undermining the City's negotiators. What that agenda was is hard to know, but it was entirely in keeping with both the personalisation that characterised the Presidency at the time, and the use of office to trade political and financial favours. The degree to which this was a coherent project of statecraft, like those of other parts of the National Government, is an open question. On corruption as a mode of statecraft, see for example Schechla (2012) and Khan (2018).

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[311] Interview with former national official, 4 May 2018

While the Gauteng Provincial Government may have been left out of the flow of money for Rea Vaya, it nevertheless held a hand of cards in this institutional game. The provincial transport department, Gautrans, controlled the permits, contracts, and subsidies for the legacy intermunicipal buses, including all buses traveling from historically (and still predominantly) black African to historically white areas. This included the monopoly permits and contract for Putco Soweto, servicing the flow of people from the country's largest black African township to its largest white city and responsible for nearly two-thirds of the buses operating in the City of Johannesburg (Competition Commission, 2021). Gautrans controlled the issue and administration of operating licenses for all road transport, making it not only a key regulator of the prospective Rea Vaya operators but effectively the only regulator of the industries that Rea Vaya was in negotiations to incorporate. It also controlled the environmental approval process binding all infrastructure construction. These veto points were identified as risks at the very start of the Rea Vaya planning process, which did not stop the Province from exercising that veto abundantly, to the extent of pushing half of Phase 1B out into the still-inoperative Phase 1C and diverting its route from Oxford Road to Louis Botha. This killed the City's original objective, since the ITP of 2003, of running a direct service from Soweto to Sandton, and played a part in delaying the route to the point that it is only scheduled to start in the rapidly departing (at time of writing) 2022/23 financial year.

The Province was not merely standing athwart the bus route, yelling stop. It had an ambitious project of statecraft of its own. As the Rea Vaya was taking its earliest shape the Gauteng Provincial Government was articulating its vision for the urban future of the province. The Gauteng City-Region was to be an integrated metropolitan area, both spatially through ambitious mycelial infrastructure and institutionally through a new "single integrated governance system". This would be to the diminution of the newly established metropolitan municipalities as the Province's documents and the City's responses made clear. The Province's project of statecraft paralleled the City's not just in time, but in form: the Gauteng City-Region was to be knitted together in the first instance by the Gautrain Rapid Rail Link, a train connecting urban centres in the three metros of Johannesburg, Pretoria (now Tshwane), and Ekurhuleni. The construction of Gautrain, wholly independent of and technologically incompatible with the legacy train network, necessitated some quick pragmatic statecraft, and as construction began Gautrans established what became the Gautrain Management Agency (GMA) to concentrate its own extremely limited capacity to manage the project. This agency would grow in importance for governing transport in

the Province, including serving as the secretariat—still at time of writing—for the Transport Authority for Gauteng, in itself a provincial act of statecraft. Between the GMA and the Gauteng City-Region, Gautrain was just the last in a long line of infrastructural projects of statecraft in the history of Gauteng.

Altogether, many parts of the South African state waded into the fray of statecraft surrounding Rea Vaya, sometimes at the level of individual government departments. The institutional politics played out through various bureaucratic and political tussles, many of which arose directly out of the Rea Vaya project and all of which affected it.

8.4. The curious business case of the bus in linear time

Chapter 7 examined some of the major implications of these processes of statecraft: was Rea Vaya successful, and what would we mean by saying yes? It argued that "success" is an under-theorised concept. It is breezily defined in most project management literature—including literature on state infrastructure projects—as on time, on budget, and delivering the planned benefits. While admirable goals all, this approach turns out to be built on almost metaphysical foundations. Measuring success by adherence to a schedule, a budget, and a set of objectives requires a definitive statement of each. This is typically taken to be the business case, the adoption of which marks final approval of the project (for example by Allport et al., 2008; Flyvbjerg, 2016). But as the chapter showed, to do so is—at best—a simplification necessary for comparative study, and at worst entirely arbitrary and potentially misleading.

Using the planning documents of Rea Vaya, Chapter 7 showed how even within the business case of a major transport project there are a variety of timelines, budgets, and expected benefits. There is not really anything that resembles the statement "on *this* date, we will have spent *that*, to achieve *these* objectives". Rather it is a documentary artefact of persuasion, a bid for scarce resources. Not a statement of concrete intent, but a tactical manoeuvre by project proponents against sceptics, detractors, and fiscal gatekeepers. The business case represents one of a range of documents for different audiences, together trying to build a coalition sufficient for such a large, difficult, and expensive undertaking. This is not to say this was an exercise in dishonesty, or at all anomalous. Rather, doing something big is necessarily harder than not doing it, although the consequences of the latter may be much more severe. To borrow a term from chemistry, the activation energy necessary for a project comes not from an exercise in pure

rationality, but—as Flyvbjerg (1998) showed in his own transport-sector case study—in the channelling and exercise of power to *create* a rational basis for the project.

In addition, despite the starting gun of the business case, a project such as Rea Vaya is not run linearly like a race. It stretches both backwards and forwards in time. Rea Vaya was pitched as a revision to an entirely different project, the SPTN, and itself underwent a series of revisions before and after the business case. These included a division into phases and sub-phases, largely as a response to the constantly shifting conditions confronted and created by the project. It is optimistic, if not fantastical, to expect the world to stand still while a complex intervention into the shape and functioning of a city is planned and implemented. Detailed operational planning also involved collecting data and refining of the project plan at every level, which necessarily changed the schedule, budget, and detailed objectives of Rea Vaya. This process of learning and iteration is endogenous to the project, and all but precludes the "pre-registration" of schedule, budget, and benefits needed to define project success using those measures.

The chapter then made the link between the concept of statecraft and these questions of success. It began by noting that institutional capacity, as a product of statecraft, is already associated with project success: but only as an input. It is just about trivially true that the ability to complete a project is important for the successful (however defined) completion of it. More meaningfully, it has been argued that there are observable effects of specific correlations of capacities on project outcomes (for example by Goldwyn et al., 2020; Chitti et al., 2022; Goldwyn et al., 2023; see also Levy, 2021). However, I proposed that improved institutional capacity be treated as a necessary *output* of major state projects. In fact, in the strongest version of the thesis, building capable institutions is the most important aspect of project success.

Major state capital projects, of which infrastructure is the most important subset, are seldom one-off undertakings. When it comes to urban transport projects such as Rea Vaya they never are. The marginal impact of a new bus route is small; the major impact comes from the *network* that results from a programme of such projects. Such a programme requires a reservoir of capacity to be built over time in order to learn from mistakes and grow more efficient. Standardisation and implementation of contracting processes and technical designs requires significant state administrative and engineering capacity and is a major determinant of cost effectiveness. I therefore proposed that the key outcome of the first project in the programme—Rea Vaya Phase 1 or 1A, depending—is the capacity to better undertake future such projects. Each project

involves learning some hard lessons, and the internalisation of those lessons sufficient to avoid them in future represents the building of institutional capacity. In other words, major infrastructure projects not only are used as instruments of statecraft; so should they be, deliberately and self-consciously so, if they are to achieve as much as they can.

The question then is: did Rea Vaya succeed institutionally? Unfortunately, as the chapter then showed, it did not. Rea Vaya was part of an explicit project of statecraft on the part of the City of Johannesburg and specifically its Transport Planning and Management Directorate (later Transport Department), with the objective of creating a transport authority that would exercise the major functions of transport in the City—including absorbing Metrobus and the parastatal Putco. This project largely failed. Firstly, Rea Vaya's dependence on consultants managed themselves by consultants, and contractors managed by contractors, largely undermined the necessary accumulation of institutional capacity. Second, the corporatized form of the City of Johannesburg and the New Public Management ethos that underpinned it were explicitly designed to decompose the state into a web of contracts; to de-institutionalise state functions rather than institutionalising them. Finally any potential exit from this situation fell victim to endless deferment of the institutional question: repeated attempts to answer it fell by the wayside in the haste and pressure of the project and a series of expedient arrangements prevailed throughout. The failure of the City's project of statecraft, of which Rea Vaya was the major means and source of funds, was therefore overdetermined. Rea Vaya was an institutional failure and that failure cannot but be implicated in the 10-year (and counting) delay of Phase 1C.

None of which is to say that we should not pay close attention to whether a project does what it should, even for a naïve definition of "should". With a passenger transport project such as Rea Vaya, there is no getting away from ridership as the primary goal. Chapter 7 concluded by unpicking the perhaps surprisingly unstraightforward questions of how many people used and use Rea Vaya. The institutional failures of Rea Vaya not only limited actual ridership, they limited the ability by the City, or indeed of anyone, even to count that ridership.

8.5. The next stop

Where does that leave the statecraft of infrastructure? Here I propose some implications of the overall argument.

The state is an object of policy and politics. This is true not only in the sense that the neoliberals, for example, set out to reshape the state in and of itself, but also on much more quotidian and less coherent levels. The state routinely, at every scale, is in play. In the context of a sufficiently large and novel undertaking, the state is *necessarily* the object of policy, insofar as its unprecedented nature demands that the state reaches beyond its existing capacities. Any such project, therefore, is also if not primarily a project to reform the state and imbue it with additional capacities.

There are approaches that attempt to avoid having to build a capable state, such as Public Private Partnerships and the New Public Management. They—to oversimplify—try not to have the state do the project or perform the function at all, but rather to contract it out. There are other contracting regimes which are variations on the theme. The idea is that with the right contract in place, the private sector will deliver the project and the state need never develop the capacities—or even retrench such capacity as it has. There are two problems with this.

The first problem is that specifying, issuing, and managing contracts is itself very capacity-intensive, and only partly in the sense of generic contracting capacity. To properly specify, issue, and manage a technical contract requires technical capacity. To specify, issue, and manage multiple technical contracts that need to work together requires not only the combination of those technical capacities but also additional capacity in coordinating and integrating them. One can try to ameliorate this by contracting someone to specify, issue, and manage those contracts, but that just pushes the problem up a level to specifying, issuing, and managing *that* contract. And every additional contract in the chain is an additional layer of risk and attenuated management.

The reductio ad absurdum of this situation is a tightly coupled complex of many contracts and subcontracts, where both the management demands and the risk inherent to the system compounds to extreme levels: Coasian hell (Harrowell, 2018b, 2018a). Unusually for reductios ad absurdum, however, this is not hypothetical—it is plainly visible in the example of Rea Vaya. This complex of contracts compounds the risks involved. The capacity to do something includes, in no small part, the capacity to manage the risk of doing it; this applies to contracting capacity too . There are ways to contract risk out, but it is hard to get around the fact that if the bridge collapses, the nuclear plant melts down, the buses stop running, then the state is the one ultimately holding the risk. At best in such a situation it might extract some financial compensation out of private actors, which is as much as good contracting can really do. That risk, ultimately

held by the state, can be unmanaged or managed. Unmanaged risk—which is almost always unforeseen or at least unquantified risk—represents a spectacular failure mode. Managed risk requires capacity to manage the risk.

The second problem with attempts to move state capacity off-book is that large state projects are not one-off attempts. There is no piece of concrete so inert, whose operations are so straightforward, that it is "set and forget". In specific cases the infrastructure might be a discrete project so large relative to the state, and the problem being solved so specific, that there really will not be a second one: the Suez Canal, for example. But infrastructure is really the capitalization of a stream of future infrastructure services. The operations, management, and maintenance of a canal of world-historical scale are technically demanding enough—and risky enough, as we have recently seen—that the capacity requirements start, rather than end, with the completion of the project.

In any case, urban transport infrastructure is always programmatic. The networked nature of transport means that a new bus route, train line, major road, is always part of or the inauguration of a series of such projects. Whereas roads need the intensive maintenance inherent to infrastructure, any other transport mode requires that *and* a whole layer of depreciating capital and operations in the form of rolling stock, route concessions or operating contracts, fare systems and the financial apparatus they require, staffing, and so on. You could elect to reinvent the wheel every time you establish a bus route but to do so would be extremely costly. The costs involved in infrastructure construction are so enormous that they dwarf even generously resourced capacity. If you propose to build versions of a project—say, phases of a Bus Rapid Transit system—two or three times in the next decade, then the possible savings on each project could pay for an in-house team several times over.

A corollary of this argument is that the greater part of the potential benefits of a novel infrastructure project, the institutional capacities to plan and implement infrastructure projects, can only be realised through a programme of such projects. This is reason to reconsider the hostility to project lock-in from rationalist project management scholars who would have it be as easy as possible to abandon a project, so as to avoid throwing good money after bad, as a project meets challenges or rising costs (e.g. Cantarelli et al., 2021, 2010; Flyvbjerg, 2016). If projects are justified retrospectively by inaugurating or continuing successful programmes, then perhaps we should prefer more rather than less lock-in. This is an extension of Hirschman's (2015 [1967])

Hiding Hand, where optimism leads projects to be undertaken that could not be rationally justified on their own terms but turn out after the fact to have large unforeseen benefits. If a city needs a new transport infrastructure network, it will never get one if disappointing results on the first, second, or even third route derail the programme.

Altogether, statecraft is inherent to large state projects, of which infrastructure is the most prominent example and the one at hand. To a degree this is universally acknowledged: no BRT system has been planned without an associated state structure to oversee the construction and then manage the operations. This is not, however, the same as taking seriously the need for a state apparatus for the undertaking of the project. Building a BRT is frequently—and so far in Africa, always—treated as the kind of one-off job that it is justifiable for the state to bring in the expertise to do ad hoc.

One reason is brute political economy. Public costs are private profit, accruing to international and local consultants and contractors and subcontractors. That complex is understandably averse to a permanent reservoir of state capacity performing many of the same functions they do at lower cost. Indeed the modus operandi of this complex is to deny that such savings, and learnings, are even possible or necessary: having learned all the lessons from other countries, the consultants can import them with the savings priced in. For all their insistence on contextual design and localization, the sales pitch is that this BRT is just the latest in a *global* programme of BRTs, for which the consultants are the institutionalized capacity. The model is complete: it just needs to be delivered. Another key reason for overlooking the capacity demands of large projects is because it is very attractive, for budget-constrained or ideologically motivated bureaucrats and politicians, to imagine that the problem of capacity can be dealt with decisively through a discrete contract. The result is the working theory that large, novel state projects can be implemented without corresponding statecraft.

If we accept the need for institutionalized capacity and the statecraft to build it, however, this poses its own major policy challenge. That is, how to build that internal capacity while building the project, which almost by definition is beyond the existing capacity of the state. Not unlike building a ship while sailing it. Political imperatives make it difficult to establish an expensive BRT agency in the absence of a BRT; even more so to establish an expensive transport agency that will only then begin to study what the appropriate modal technology is, what routes it will

follow, and whether it is economically viable. This is the major policy question regarding the statecraft of major infrastructure projects.

The major academic questions, and opportunities for future research, lie in systematically comparing this BRT project to other BRTs, to other transport projects, to other infrastructure projects, and other large state endeavours. While much of what unfolded with Rea Vaya need not be unique to transport, some of it was and more may turn out to be. The political economies, the political imperatives, and the nature of incumbents will vary. This last point is key, and perhaps represents the most intriguing question for future research. What is it about transport that it so typically features or produces the powerful, ruthless, and organized legacy incumbents observable—for example—in South Africa, Kenya, Japan, Colombia, and the United States? And what is it about major transport projects that they create such powerful incumbencies of their own, whether for old incumbents or new? That remains an open question.

8.6. This study's contributions

The first and key contribution of this thesis to the wider literature is to advance the theory and concept of urban statecraft, and show that it has wide applicability and explanatory power for understanding (at least) the state, large state projects, and transport. The rise of "governance" as a theoretical frame was an important corrective to the sometimes mechanistic study of the workings of the state that came before. It widened the frame of institutional analysis to encompass private actors, NGOs and international organisations, social movements, and other structurally important organisations. However the governance turn also coincided with the rise and propagation of new, complex state forms, processes of de- and re-centralisation, and the development of new institutional relationships between the state and other actors.

With respect to African cities in particular, governance research has largely looked beyond the state (Lindell, 2008). This has left a gap for close study of the internal dynamics of the formal state—particularly the urban state—the behaviour of its officers, and the many interactions between the two (Cupers and Meier, 2020). As this project has shown, urban statecraft as a theoretical framework allows for that close attention to the state—indeed demands it—without in any way diminishing the significance of private, informal, traditional, and other institutional forms.

Furthermore, by grounding statecraft in a more developed theory of the state, one built on the rich ontology of regulation theory, this thesis allowed the concept to roam far beyond the formal boundaries of the state. South African projects statecraft at least since the end of apartheid have been extensively directed at the placement and nature of those boundaries: the respective roles, claims on resources, and relations of power between actors within and without the state. This integral concept of statecraft, analogous to Gramsci's (1976) integral state, makes for a powerful and widely applicable theory of how institutions act as, and are acted on by, social agents. It also thus complements and extends the regulation approach, by analysing and not just theorising the mechanics and projects of institutional change.

This relates closely to the second contribution of this thesis, which is empirical. This is among the most empirically detailed studies to date of a recent African transport project, whose major and growing role in the South African state and politics was made clear in Chapter 1. Thanks to the extraordinary personal archive of the late Colleen McCaul and the generosity of Neil Hickson, we can now know an extraordinary amount—from mostly documentary evidence—about the conceptualization, planning, implementation, and challenges of Rea Vaya. This thesis necessarily focused on a subset of the vast quantity of data available; I have deposited the archive, with Neil's permission, in the University of the Witwatersrand's Historical Papers Research Archive. Hopefully this is the first of many research projects that will find troves of previously unreported facts, some widely speculated-on or otherwise quite controversial, in Colleen's extraordinary collection of documents, notes, and reflections.

This thesis involved the extremely close examination of a single case study. In doing so it not only added significantly to the facts available about this pivotal project, but also makes the case for examining the workings of the state to the finest detail possible. As much as the major decisions of the state are documented and publicized, they rest on the gradual accretion of thousands of individual conversations, negotiations, conflicts, and resolutions. These together are vital to understand state policies, projects, and decisions whose origins and internal dynamics are often occluded. As Flyvbjerg (1998) found with respect to a bus station in Aalborg, outcomes seemingly derived from carefully objective technical study are in fact the result of struggles and power relationships; outcomes whose technocratic form reflects precisely the winners of those struggles.

Finally, this study adds to our policy knowledge regarding why transport systems in Africa, and BRT systems in particular, keep running into similar challenges. The consultants who sell and plan these systems, while perhaps well-meaning, represent BRT as a model that is deployable over and over again, on the strength of the same handful of ostensibly successful examples in Latin America. They talk their book, so to speak, as the ones to deliver the model. The complexity and expense of the undertaking is minimized or flatly denied. This suits the local political and bureaucratic boosters of the project who themselves need to overcome local resistance. Seldom does serious thought appear to be given—by international or local planners—to the institutional challenges, or even the major institutional questions, posed by the project. The whole thing is planned and executed in a pseudo-pragmatic haste that in fact results in significant delays, implementation failures, and the creation of new incumbents and opportunities for arbitrage. In the previous chapter I wrote of these projects paying school fees for the rest of the policy programme. Paying those school fees is inevitable, but states should endeavour—and be able—to attend megaproject school, not just the school of hard knocks.

Thank you for reading.

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