MyCiTi Business Plan 2015 Update

Phase 1 and N2 Express

Approved by the Cape Town City Council on 30 April 2015 under item C 57/03/15

TCT
TRANSPORT FOR CAPE TOWN
The City of Cape Town's Transport Authority

MyCiTi
Siyajikeleza. Laat Wiel. Going Places.

Purpose of Business Plan update

The Business Plan for Phase 1A, 1B and the N2 Express was approved in 2012 and is currently in operation.

This Business Plan update serves a number of purposes, namely:

1. To assess the successes and / or shortcomings of the original methodology for MyCiTi as elaborated upon in the Business Plan, as they relate to the overall management of the IRT system. This assessment will also serve to review planning assumptions, and reflect on lessons learned and best practices, to set out what needs to change going forward.
2. To elaborate on performance against the Business Plan, with the focus on the operational matters and related moderation, the revenue management and the financial management.
3. To report on any adjustments to the methodology and the performance parameters which are to be amended and / or included into the 2015 Business Plan going forward.

This Business Plan Update is based on current knowledge regarding system requirements and information currently available.

Continuous detailed and in-depth assessments are required to optimise system performance, ensure ongoing financial sustainability and achieve an optimal implementation programme. In response to this and further information on system needs, risk mitigation, reduced uncertainty, funding changes and the like, the business plan and the associated development programme will be subject to change.

While every effort has been made to present accurate and current information, the City will not be held liable for the consequence of any decisions or actions taken by others who may utilise the information contained herein.

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Abbreviations and key terms

AFC	Automated fare collection
APTMS	Advanced Public Transport Management Systems (see also "control centre" or CC, and OCC)
ATM	Automatic teller machine
BRT	Bus rapid transit
CBD	Central business district
CC	Control centre. See APTMS (the system used to operate the control centre and other technologies) and OCC regarding the operations of the control centre
CVM	Card vending machine
CCTV	Closed circuit television
CITP	Comprehensive Integrated Transport Plan (previously referred to as the ITP)
CRC	Continuously reinforced concrete
CRR	Capital Replacement Reserve
DORA	Division of Revenue Act
EFF	External Financing Fund
EMV	Europay/MasterCard/Visa
FS	Fare system
GPS	Global positioning system
IDP	Integrated Development Plan
IPTN	Integrated public transport network
IRT	Integrated rapid transit
ITP	Integrated Transport Plan
ITS	Intelligent transport system
LIO	Propriety software to track vehicles forming part of the APTMS
MFMA	Municipal Finance Management Act (56 of 2003)
MLTF	Municipal Land Transport Fund
MRE	Municipal Regulatory Entity
NDoT	National Department of Transport
NLTA	National Land Transport Act (5 of 2009)
OCC	Operations control centre
OMS	Operations Management Service– the departments and branches of TCT responsible for managing MyCiTi operations
PRE	Provincial Regulatory Entity
PTISG	Public Transport Infrastructure and Systems Grant
PTIG	Public Transport Infrastructure Grant
PTNG	Public Transport Network Grant
PTNOG	Public Transport Network Operations Grant
PTOG	Public Transport Operating Grant
SARS	South African Revenue Services
SCM	Supply chain management
SDA	Service delivery agreement
CTSDF	Cape Town Spatial Development Framework
SS	Station services
TDM	Travel Demand Management
TCT	Transport for Cape Town
TIC	Transport Information Centre
TMC	Traffic Management Centre
TOD	Transit Oriented Development
TDM	Travel Demand Management
VAT	Value Added Tax
VO	Vehicle operation
VOC	Vehicle operator company

1. Strategic Overview

1.1. Introduction

This introductory section sets out at a high level both the key strategic achievements brought about by the MyCiTi project as well as elaborates on some of the main changes to 2012 MyCiTi Business Plan assumptions and strategies to address the implications, which emanated from the 2010 MyCiTi Business Plan, its assumptions and its methodology.

The body of the document follows the structure of the 2012 Business Plan, updating the plan in line with current information and approaches. After the introductory chapters, each chapter is preceded by a chapter summary highlighting achievements, challenges and the changes between the 2012 Business Plan and the current approach. The document is referred to below as 'the Update'. This Update does not repeat some of the detail of the 2012 Business Plan to reduce its size. For more detail, please read this 2015 Business Plan Update with the 2012 MyCiTi Business Plan, as the former serves as an update and refinement where necessary, as the service is currently in play.

1.2. High level summary of achievements

By January 2015 the MyCiTi service consisted of 28 routes, 35 stations and more than 300 bus stops. More than 395 drivers, in more than 317 buses, transported 49 207 passengers[1] on average every weekday.

The MyCiTi service represents a highly significant intervention in the elevation and improvement of public transport services in Cape Town, introducing fundamental changes and innovations which, over the coming decades, will have positive impact well beyond the MyCiTi service itself.

Phase 1 was always viewed as the start of the IRT rollout, piloting a new methodology, testing new technologies and business innovations. It has proven in most cases successful, and thus offers a good platform for further improvements, and further rollouts. The aim is to now, through this review, to move towards an integrated public transport approach, hence the need to analyse best practice as well as gaps, and then determine the changes required to consolidate the new methodology in these phases, as well as in future rollouts.

Growing passenger numbers

Since its launch in May 2010 until January 2015, approximately 23.3 million passenger journeys have been made on the MyCiTi rapid transit system, many of whom use its rapid

[1] Analysis of passenger information in December 2014

bus service on the dedicated bus lanes. A total of 3 881 667 passenger journeys were recorded during the last quarter of 2014. By January 2015 the roll-out of Phase 1 and the N2 Express was 68% complete. When the Phase 1 and N2 Express rollouts are fully complete the system is projected to carry 75 000 passengers per day.

The following figures shows how the daily passenger numbers have increased between 2011, when the regular interim services commences, and 2015, relative to increases in operational kilometres linked to the rollout of new services.

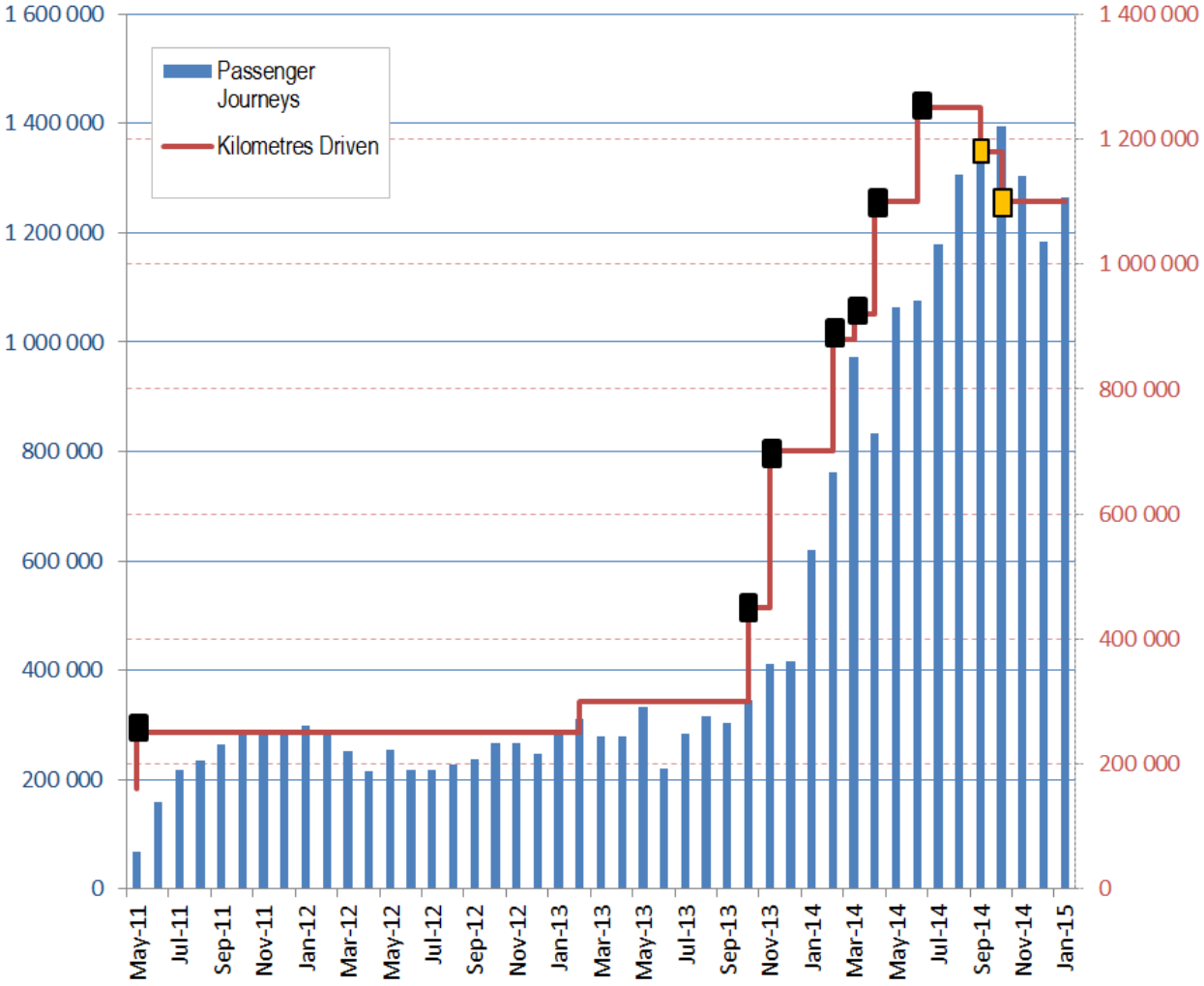


Figure 1-1: MyCiTi passenger journeys and operational km

*** Note: these are the numbers of individual passengers from origin to destination, for one way travel. It is not of 'boardings', so it does not count a passenger again when they transfer to a new bus.**

*** Note: operational kms have been rounded for clarity.**

■ Milestone in MyCiTi rollout

■ Implementation of moderation exercise (see Chapter 4)

Summary of MyCiTi milestone rollouts

World Cup services	Airport, Inner City loop, Cape Town Stadium Shuttle	May 2010
Milestone 0	Civic to Table View & Airport with temporary feeders	May 2011
Milestone 2.1, 2.2	Table View Routes: 213, 214, 215, 216, T01 extension	September 2013
Milestone 1.3 - 1.5	Inner City Routes: 101,102,103,104,105,106,107	November 2013
Milestone 2.3	Table View Routes : 251	November 2013
Milestone 3.1	Atlantis Routes : 217, 230, T03	November 2013
Milestone 1.6	Inner City Routes: 108, 109	February 2014
Milestone 4	Dunoon Routes: T01 Extension	March 2014
Milestone 3.2	Atlantis Routes 231,232,233,236,239,T03 Extension	April 2014
N2 Express, Milestone 1	Khayelitsha and Mitchells Plain: D01, D03	July 2014
Other	Table Mountain service, Route 110	July 2014

High quality and user satisfaction

The MyCiTi service has introduced new standards to the provision of public transport in Cape Town. It offers regular and predictable services throughout the day with its core times, post-moderation, being from 5:30 am to 21:30 pm, including relatively frequent off-peak services, and with the opportunity, should demand require it, for the introduction of a night service in identified areas.

The dedicated roadway on trunk routes has led to substantial travel time improvements, especially in peak hours, where, on many routes MyCiTi significantly outperforms private motor vehicles.

Stations offer not only protection from the weather and a greater sense of security when waiting for vehicles to arrive but, because fares are paid on station entry, they allow rapid boarding of large numbers of people, thus significantly reducing vehicle dwell time at stations and improving travel speed, thereby reducing the number of vehicles and drivers required to move the same number of passengers.

Level boarding in nearly all components of the system has made the system wheel-chair and pram friendly thus providing much greater freedom of movement, especially to disabled and other special needs users. The system is clean and security levels are high, giving substantial additional comfort to users.

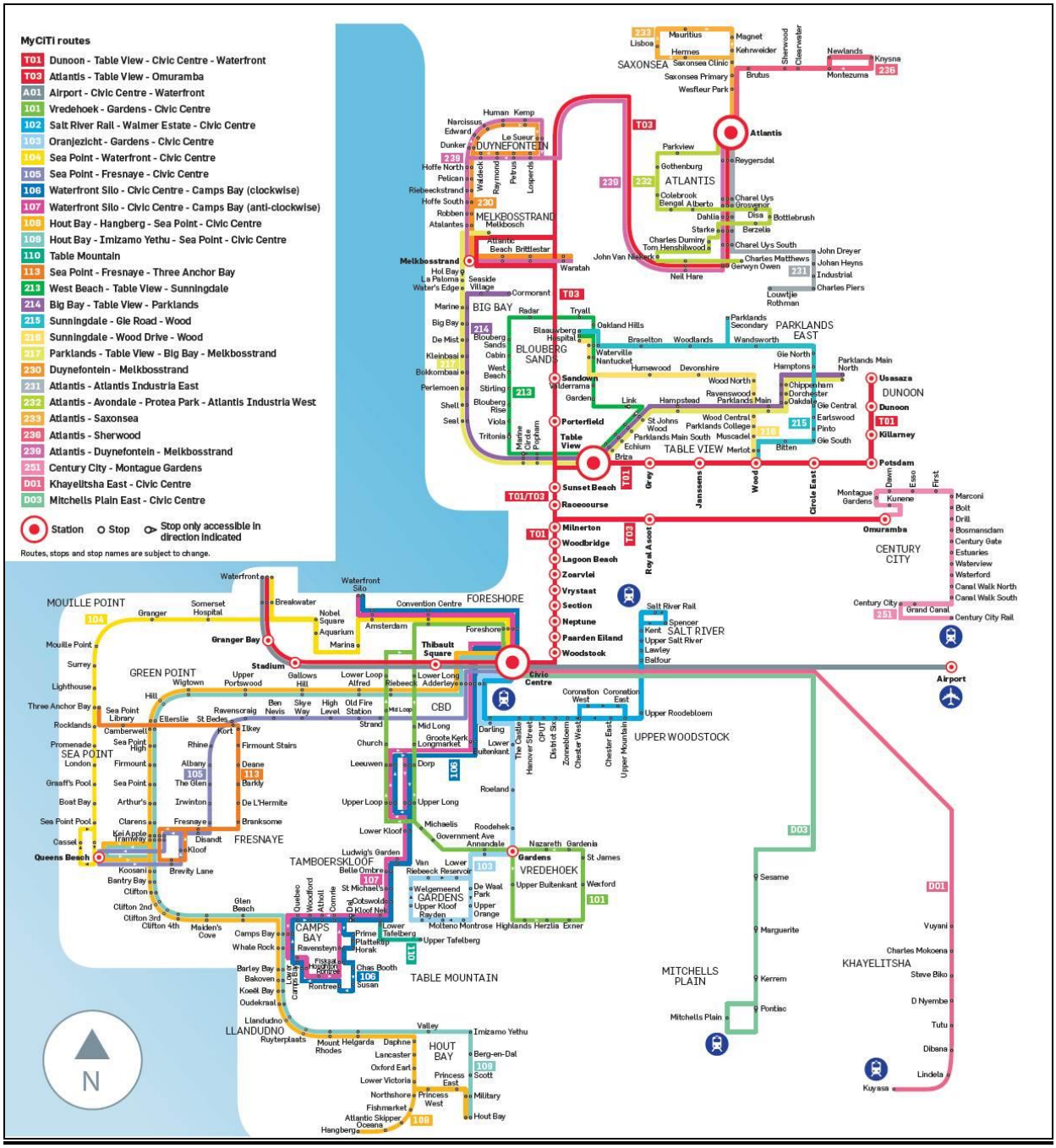


Figure 1-2: MyCiTi system map showing MyCiTi routes in January 2015

The combination of trunk and feeder services provides comprehensive coverage in most of MyCiTi's areas of operation.

The high service levels and convenience, combined with relatively low fares, have resulted in the service being used by people of all income levels, thus demonstrating a degree of social integration not widely evident in Cape Town or South Africa as a whole, where most public transport usage is restricted to lower income, captive users.

The service levels and standards embodied in MyCiTi offer a benchmark for the development of services across all modes and throughout the metropolitan area.

A driver of new institutional arrangements

National policy as embodied in the National Land Transport Act (NLTA, 2009) views metropolitan governments as the key locus of responsibility for public transport in the major cities, enabling integration of public transport modes as well as integration of public transport with land use and other built environment related functions.

MyCiTi has been a crucial catalyst for fundamentally new, emerging institutional arrangements for the provision of public transport in Cape Town. Prior to the implementation of MyCiTi public transport responsibilities in the City of Cape Town had been restricted essentially to high level transport planning, with limited impact on actual services.

To facilitate the full rollout and achievement of integrated, interoperable and to intermodal transport across the city, as well as driving down the cost of the public transport users access priority of a strong governance structure was set up through the establishment of Transport for Cape Town (TCT), the City's transport authority.

The next step in the process, which TCT is embarking upon, is to take lessons learned from the rollouts and incorporate them into the way forward. This was started with a costed, calibrated Integrated Public Transport Network (IPTN) in 2014.

The embodiment of a new competitive business model

The MyCiTi service represents a new form of competitive business model for the delivery of public transport services, with limited competition provided for in the current agreements with VOCs, but where VOCs will have to compete for future contract, after the contracts for the Phase 1 has come to an end after 12 years.

Legacy models, such as the one embodied by existing Golden Arrow Bus Services currently contracted to provincial government, requires the bus operator to collect the fare revenues and thus receive payment for services through a combination of fares and subsidies. Within a framework provided by the public authority the operator seeks to maximise profit by optimising the number of passengers carried in relation to the services provided while reducing costs resulting in an irregular service in the off-peak. While such a model has some merits, especially in terms of reducing loss making services, it transfers much of the responsibility for network and timetable design, and for making trade-offs between service levels, fares and subsidies to a private company; it is not sustainable and does not facilitate accountability or integration required under the NLTA, 2009. The City of Cape Town is leading the change of direction towards integrated transport and has enabled this change to occur under the MyCiTi banner.

In the MyCiTi business model all fares are collected through a single, smart card-based fare system independent of the vehicle operators, who are paid based on vehicle services provided rather than the fares they collect. This makes it possible to have more than one private vehicle operating company in an area yet still operate as a single seamless system.

The regulation as set by the National Department of Transport (NDOT) enabled this to be effected. It is now up to TCT to roll this out across all road and rail scheduled transport services.

Under the MyCiTi business model the vehicles themselves are subject to continuous real time management through a central control centre, which also determines all routes and times of operations. It becomes the City's job, through its control centre, and using modern advanced public transport management system (APTMS) technology, to optimally match the network and services to demand. This process has been evident in the 'moderation exercise' currently being implemented, which seeks to enhance services while lowering costs.

Unfortunately the poor performance of the initial control centre service provider, which led to the contract being terminated and a new tender, which has not yet been fully concluded, has constrained the City's ability to drive out efficiencies thus far. However should however be rectified soon with the aim of the Control Centre being fully operational by the end of 2015.

The MyCiTi business model places responsibility for making the trade-off between service levels, fare levels and subsidies with the public authority, while multiple vehicle operators, will in due course compete to provide services, driving costs down – rather than through the network and timetable design, which would usually result in inadequate services in times of lower demand.

In Phase 1 and the N2 Express there are already four different vehicle contracts run by three completely independent operators, three being the concluded 12 year VOC contracts with TPI, Kidrogen and TBART and the fourth being the 3 year interim contract with the N2 Express Joint Venture (made up of CODETA, Route Six and GABS, where GABS has been elected as the operator with the drivers sourced from the taxi industry). This contrasts with the legacy approach where the public authority has been, in effect, beholden to a single monopoly service provider.

The full benefits of such a model will only be realised over time. For the initial 12 year period, in order to facilitate the transition, contracts have been negotiated with existing service providers, including minibus taxi operators. After the 12 year period has been concluded, vehicle operating companies will have to compete for contracts through a tender process, which is likely to drive costs down.

The creation of fare system and control centre platforms with the ability to support metropolitan wide integrated services

The Advanced Public Transport Management System (APTMS) platforms implemented in terms of the MyCiTi model are crucial to the seamless integration of transport modes and to integrated ticketing.

The fare system introduced as part of the MyCiTi project, as mandated by national government, represents cutting edge technologies globally, especially in terms of its integration with the national banking system. Internationally, most existing fare systems are

stand-alone systems requiring their own independent back-office and payment processing systems. The **my**connect fare system's compliance with Europay Mastercard Visa (EMV) standards enables most back office functions to be performed by the banking system and will make it possible in time for the MyCiTi system to accept contactless smartcards issued by a range of banks (e.g. credit and debit cards with chips for contactless transactions) and EMV cards issued by other cities and operators.

The substantial challenges inherent in implementing fundamentally new technologies have been outstandingly met by the **my**connect system, which won the 2014 Mastercard Award for the best bank based fare system internationally and has been shortlisted for the same award in 2015.

Distance based fares were introduced on 03 August 2013, enabling passengers to pay lower fares for shorter distances travelled. The new fare system also offers the option of cheaper fares outside peak times. Simultaneously MyCiTi Mover packages were introduced, offering passengers savings of 20% or more on Mover fares, compared to Standard fares.

MyCiTi Mover package sales started on 28 July 2013 and sales grew to more than 87.3% of total load value at MyCiTi stations by the end of December 2014. In the last quarter ending December 2014, EMV value loaded was at 12.7% up from 11.4% in the previous quarter and TSV value loaded was 88% of the total load value.

On 18 October 2014, Single Trip tickets were introduced. This product allows the passenger to travel between any two points on the MyCiTi System. The ticket basically allows the passenger a tap in and a tap out the system. Figure 1-4 show the increases in sales of Single Trip tickets.

The MyFare system has the potential to be extended to all public transport services in Cape Town, including the current GABS services (upon assignment, as they are redesigned under the contracting authority component of TCT) and Metrorail. While this will be a complex process, including installation of new fare equipment and could involve the re-design of fare structures and related business rules for all services, the technological basis for a modern, integrated fare system has been created through the MyCiTi project. **My**connect is already in the process of being extended to the on-street parking system.

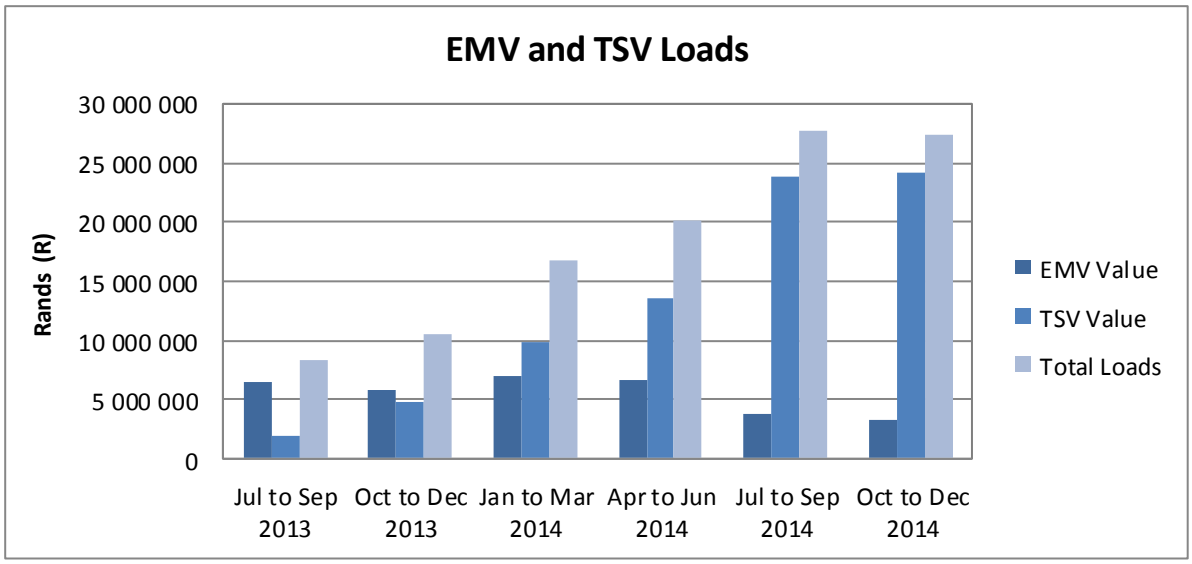


Figure 1-3: EMV and TSV Loads

***TSV = Transit Stored Value, or Mover Points which is used with the MyCiTi Mover Packages.**

****EMV = Euro Master Card Visa, this is Rand value that can be used as a debit card for purchases at participating retailers or to pay for travelling on the MyCiti system.**

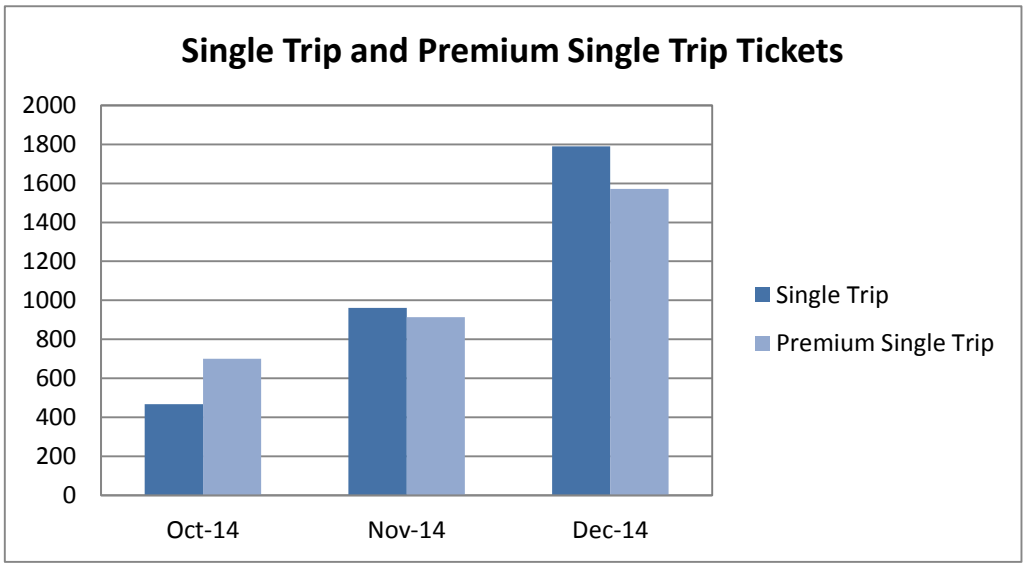


Figure 1-4: Single and premium single trips

As indicated, the APTMS implementation has not been as successful thus far as the fare system implementation, with the contracted private sector supplier failing to meet the requirements of the contract and the contract thus being terminated. However, once a new contractor is on board, and has had time to correct the shortcomings of its predecessor, the control centre will be functioning as envisaged and it will be possible to track and manage all public transport vehicles in real time. It is estimated that the system will be bedded down by

the end of 2015. This will enable much better management of public transport services, including optimisation of services to demand, with potential to extend it to the minibus taxi industry as part of a set of mechanisms for better regulation of this sector.

A vehicle for empowerment

Apart from the social integration achieved through passengers of different income levels and geographical areas using the service, the MyCiTi project has been the vehicle for much the most substantial instance of broad based black economic empowerment in Cape Town since the end of apartheid.

Two of the three companies currently operating the system in Phase 1 (TPI and Kidrogen) have been created through transforming a large number of small, informal sector operators into new, much larger, formal sector enterprises. These two companies make up 80% of the Phase 1 operations currently operational.

These companies, which currently have an average turnover of around R 250 000 000 a year through the provision of vehicle operations to MyCiTi potentially form the nucleus of the development of a set of new public transport vehicle operators capable of providing real competition to the legacy provider in the metropolitan area, Golden Arrow Bus Service – a methodology that was initiated and required by National Government.

The process of negotiating with the minibus taxi industry to form companies, and then to negotiate long term contracts with the resulting entities was immensely challenging, taking approximately five years in Phase 1. Given the business culture change required and the volatility and conflict ridden nature of the informal minibus taxi sector the fact that this was achieved with minimal upheaval was a significant achievement.

Building on the experience of the Phase 1 negotiations, the implementation of the N2 Express service in Mitchells Plain and Khayelitsha was a relatively much quicker process. The experience in Khayelitsha demonstrated the benefits of engaging with affected industry role players at a regional level early in the planning process. An inclusive company formation shareholding model was developed which provides for formation of region based companies that are structured in such a way as to ensure that region-based companies can function prior to all of the qualifying taxi associations joining, and at the same time ensuring that associations can join incrementally as and when the MyCiTi system is further implemented. This is considered a major achievement and best practice success, the model of which will be built upon for the other five minibus-taxi regional bodies.

Key areas where outcomes have not met initial expectations and lessons learned

There have been a number of areas where there has been divergence between anticipated and actual outcomes, often with adverse financial implications.

The bus rapid transit model was originally embraced by national government on the basis that the efficiencies it yielded through, for example, greater travel speeds allowing vehicles

to do multiple peak journeys, would result in no requirement for operating subsidies. Substantial funding was made available to cities conditional on implementing such a model.

While both the 2010 and 2012 Business Plans projected operating subsidy requirements, the actual requirement has only become more clearly evident as roll-outs have taken place. This process and the related amendments to assumptions will be elaborated upon in this Update.

National government has adjusted its funding approach to some degree to accommodate the operating subsidy requirement although, as it currently stands, it is insufficient to avoid cities themselves having to make substantial contributions from their own revenue sources. As more cities face similar – or worse – challenges this may change.

With the introduction of any substantially new service it is normal that, to some degree, not only will actual user behaviour differ from projected behaviour, but also that operational parameters made in planning the service will need to be adjusted. The process of 'moderating' the service in response to this is currently underway in respect of Phase 1 operations. This process is helping to contain the subsidy requirement, although here again the extent to which such containment is possible depends on a variety of factors which are not always predictable.

It is important to note that while such containment attempts to manage costs, reductions in service quality could also impact potential passenger demand and therefore revenue collection. The process of moderation therefore needs to find an optimum balance between supply and demand, to minimize costs and maximise revenue, which should help the move towards a sustainable service.

1.3. Key differences between 2012 Business Plan assumptions and current reality

The following include key differences between the 2012 Business Plan and current reality of the MyCiTi Service:

Actual ridership patterns differ significantly on a number of routes from modelled patterns

Ridership patterns were modelled based on transport survey data and the traditional transport planning process that estimated travel desire between a variety of origins and destinations and assumptions on how users would respond to given fare and service levels. Modelled figures also assumed that all minibus taxi operations would be removed from the area of phase one. However the nature of the demand model does not (and cannot) predict with accuracy finer movements within areas (mainly where feeder routes operate) nor the pattern of usage throughout the entire day. The transport demand model is a morning peak hour model and whole day patterns are extrapolated using factors based on historical transport data.

Actual ridership has generally been lower overall, but more sharply peaked than anticipated resulting in lower fare revenue while at the same time driving a need for bringing into service additional, costly, peak buses.

Vehicle unit costs are higher than anticipated

Modelling in the 2012 Business Plan was based on an assumed set of costs. However, actual prices had to be negotiated with the vehicle operating companies in a context where, because of new technologies and operational requirements, actual costs were often uncertain; and where there was more pressure on the City than there was on vehicle operators to reach agreement and make use of the infrastructure and vehicles that had already been built or purchased by the City. The formation of three companies (originally two had been anticipated) also drove costs higher.

Operational parameters sometimes differed from those anticipated

Fleet requirements and driver costs, which in turn drive costs, are based on numerous operational assumptions, such as how long it takes for vehicles to return to the point of origin after completion of a journey cycle. In a number of cases the reality differed from anticipated parameters.

In 2013 concern around the implications of emerging costs and revenues led to a study into the long-term cost implications of extending MyCiTi to the whole metropolitan area.

This report sought to apply, under various sets of assumptions, the costs that were either tendered or negotiated in the Phase 1 long-term contracts to a metropolitan-wide rollout. The study concluded that it is financially feasible to extend the MyCiTi system across the metropolitan area, but only under certain conditions. Crucial factors include not only the need to contain unit costs, and enhance fare revenues, but also to understand how patterns of demand drive costs and how such patterns need to be managed and addressed to improve the affordability of the system. The study confirmed the critical importance of peak to off-peak demand ratios, counter-flow demand, seat renewal and travel distance.

It confirmed the validity of the BRT model, but emphasised the need to pursue a 'hybrid' approach in which rather than attempting to fully replace minibus-taxis, a portion of the market may need to continue to be served by minibus-taxis specifically to assist during the concentrated peak periods and in areas with low and irregular demand. Similarly, it may be appropriate to leave some GABS services in the peak in place. Approaches are being investigated to make the different types of service complementary.

The 'Making MyCiTi Financially Sustainable' study was concluded after long-term vehicle operator contracts were signed and was able to include knowledge of these costs into its findings, but before the 2013/14 rollout began to reveal that fare revenues were significantly lower than anticipated.

Key findings of the study included: reiteration for the need for regular moderation of services (especially a few months after a new service have started); placing a limitation on

the supply of buses at the peak of the peak (also referred to as "peak capping" of services, which can include introduction of a limit to the frequency of buses); a percentage of minibus-taxis to remain providing services, resulting in a hybrid between MyCiTi and minibus-taxi services; the emphasis of the need to provide an integrated transport solution (represented by the 2032 IPTN), and to address demand in the medium to long term with measures to improve Travel Demand Management and Transport Orientated Development. This study will now be reviewed in view of the revealed lower income-than-expected regarding Phase 1 services.

Moderation process

A review of operational practices and service characteristics (referred to as a 'moderation' exercise) was undertaken around mid-2014, six to eight months after the major roll-outs, starting from end 2013, to analyse the passenger take-up of existing services, rationalise services and balance supply with passenger demand. Through this first round of the moderation exercise the service was adjusted to correlate demand and supply and more cost-effective approaches have been adopted where possible. The below graph shows the decrease in the number of monthly peak buses throughout the system, which increased significantly due to the rollout of new services in 2014, but has since been decreased due to increased efficiencies resulting from the moderation exercise. The number of peak buses used is a major driver of operational costs for the MyCiTi service, and decreases in the number of peak buses result in significant operational savings.

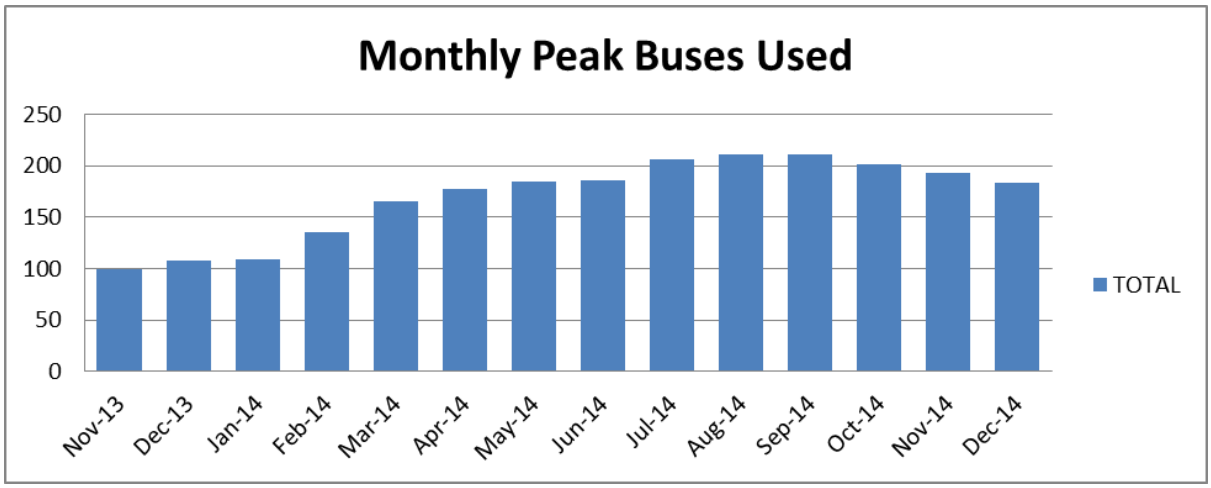


Figure 1-5: Monthly peak buses used[2]

It is important to note that while the moderation process attempted to contain operational costs, there is a possibility of passenger demand being affected due to reduced system exposure and therefore a marginal impact on revenue collection.

[2] Peak buses are the average number of buses actually operated on any given day, excluding spare buses used for servicing and repairs, and excluding contingency buses.

The following table shows how planned and actual vehicle kilometres per month supplied have changed through the current process of implementation and service moderation.

The left hand column shows the 2012 Business Plan anticipated kilometres per month. During negotiations, when it became apparent that unit costs would be higher than anticipated a rationalisation of services was thought possible bringing assumed kilometres down to a level sustainable in terms of the anticipated revenue, and a lower guaranteed number of kilometres agreed to. Actual services provided were initially substantially higher than this, to test the actual demand, but as a result of the moderation process are being brought down approximately to be in line with the 2012 Business Plan.

It was concluded that the 'Moderated: Balanced' scenario was the preferred scenario which was accordingly implemented. Limited further moderation may be possible without serious adverse impact on passenger experience, however, if aggressive service reduction measures (as shown in the last column above) wherever to be implemented, service levels could fall significantly and the integrity of the MyCiTi system could be severely compromised. This was therefore avoided. However, as the system is bedded down other approaches to containing the deficit may be followed, as discussed elsewhere in this Update.

PHASE 1: MONTHLY KILOMETRES					
2012 MyCiTi Business Plan	Assumed kms for s33 report	Guaranteed as per contracts with VOCs	Projection based on practice as at mid-2014	Moderated Balanced	Aggressive service reduction
1 229 402	1 083 069	812 302	1 614 544	1 263 479	762 119
		% of Business Plan kms	131%	103%	62%
		% of s33 kms	149%	117%	70%
		% of guaranteed kms	199%	156%	94%
				Implemented	*Not recommended*

Table 1-1: Monthly kilometres

Continued presence of minibus taxis

As indicated, the Phase 1 service was designed on the assumption that MyCiTi would comprehensively replace other forms of road based public transport, including all minibus taxi services except regarding services originating outside Phase 1 and ending in the Phase 1 area. It was however always assumed that minibus services that originated from outside the area intersecting with MyCiTi routes would continue to operate.

Regulation of minibuses, and especially preventing those operating illegally in competition with MyCiTi services has proven challenging. At the same time, there is a re-assessment underway as to whether it is necessarily in the interests of MyCiTi to remove all minibus-taxis from operating in MyCiTi areas. To the extent minibus-taxis carry passengers primarily

in the peak and not in the off-peak this reduces the demand for additional peak MyCiTi services and can improve MyCiTi's cost-to-revenue ratio.

In the area of the N2 Express MyCiTi services were always designed to co-exist with minibus-taxi and other services.

1.4. Other changes to assumptions and lessons learned

There are other areas where the experience in Phase 1 has led to new insights about how approaches may be changed in further phases. While this is not the purpose of this document some of these issues are discussed in the body of the document.

1.5. Adjustments to contain the subsidy requirement

The 2015 MyCiTi Business Plan Update is based on improved efficiencies resulting from the moderation exercise. However, as will be evident from the Business Plan, there is a need to further improve finances, for which a number of strategies are presented to reduce operational costs.

The evaluation of the MyCiTi service highlights a number of financial challenges. Apart from receiving lower National funding than anticipated, fare revenue is currently significantly lower than modelled results.

The Business Plan Update shows that based on implementing the measures identified in the moderation exercise, from 2016/17, when national funding for ancillary costs falls from 70% of costs to 50% for most routes, the funding requirement will be in excess of 4% of rates unless alternative measures can be implemented. This is further elaborated on in chapter 9, with the focus on the changes that have been made and adaptation of the business logic of the MyCiTi system.

As indicated, national government has so far not adjusted its approach to the funding of operating deficits for bus rapid transit projects. While this may occur, especially as more cities on the program face similar or worse outcomes than Cape Town, and while the City of Cape Town should continue to argue for such changes, other mechanisms should be pursued to address the higher than anticipated operating subsidy requirement until an appropriate equilibrium is reached.

The City has committed to contribute up to 4% of rates income to the subsidisation of transport services for Phase 1A, 1B and N2 Express, as approved in the 2012 Business Plan. This recommendation remains in the 2015 Business Plan update and has been taken forward in the financial management of these phases.

Strategies to reduce operational costs are described below, and explained in detail in chapter 9:

Strategy 1:	Implementing the five-pronged approach, utilising the mechanisms described below.

Strategy 2: Engaging with National government to change the PTNG framework formula to widen the definition of ancillary operating costs, or to provide an exemption from the formula's constraints to increase the contribution to ancillary operating costs, noting that this will reduce the amount of capital available for Phase 2 rollout and operational subsidy.

Strategy 3: More aggressive moderation, which will result in a significant reduction in the quality of the service and is likely to compromise the integrity of MyCiTi as an alternative mode to choice users. This will result in a loss of passengers, with concomitant impacts on revenue collection. It is therefore not recommended.

The main emphasis of the 2015 Business Plan Update is to address the projected deficit actively through **Strategy 1**, with the aim of completely removing the deficit (after applying the 4% rates contribution within the current national funding framework) in a manner that improves cost recovery. This will preserve some national funding for both capital and operating subsidy for future roll-outs.

To reduce the projected operating deficit in the 2016/17 financial year the following are the targets regarding potential cost savings and system revenue improvements, over and above the moderation which will have been executed by the middle of 2015:

1. Evaluating which components of operating costs can be considered to be ancillary in terms of the grant funding framework conditions (R4m).
2. Increasing fare income including travel demand management interventions (R20m).
3. Reducing vehicle operator rates (R15m).
4. Further moderation, without compromising service quality (R8m).
5. Improving the passenger demand profile (R5m).

Strategy 2 is aimed at providing a safety net regarding a funding gap that may remain in-as-far as Strategy 1 is not completely successful, or where risks materialise that the City cannot in the short term anticipate or manage (eg unanticipated very substantial fuel price increases). This is done by engagement with National Government to change the PTNG framework formula to widen the definition of ancillary operating costs, or to provide an exemption from the formula's constraints to increase the contribution to ancillary operating costs, noting that this will reduce the amount of capital available for Phase 2 rollout and operational subsidy. In terms of the Division of Revenue Bill 2015, the amounts provided for by National government under the Network Operations Component of the PTNG are currently almost sufficient already to permit funding to continue at a 70% level. However, as this option is not under TCT's control, it should only be pursued as a safety net in-as-far as the above 5-pronged strategy does not deliver the required operational cost reductions and revenue improvements.

The update, and especially Chapter 4 and Chapter 9, deal with these issues in greater detail.

2. Summary of key technical conclusions

Council on 31 October 2012 approved the 2012 MyCiTi Business Plan[3]. In the covering report to Council regarding this 2015 MyCiTi Business Plan Updated it is recommended that Council resolves that its decision above remains in place, subject to the minor amendments.

Therefore, once approved, the consolidated approval by Council regarding the MyCiTi Business Plan for Phase 1 and N2 Express is effectively as follows:

(a) This 2015 MyCiTi Business Plan Update for Cape Town's MyCiTi Integrated Rapid Transit (IRT) system, covering Phases 1 and N2 Express (referred to as "the Business Plan"), is adopted by Council. It, read with the 2012 MyCiTi Business Plan in as far as it is not amended by the 2015 plan, is therefore the basis for the continued implementation of the Phase 1 and N2 Express MyCiTi services.

(b) Approval was granted to plan, design and implement the necessary infrastructure, acquire such property, purchase such fleet and contract such operators and professional services, as required to provide the services as described in the Business Plan, subject to approved budgets, compliance with legal requirements and following prescribed procurement processes.

(c) All MyCiTi capital costs, as well as MyCiTi operating costs related to the design, planning and implementation of the MyCiTi system may be subsidised as provided for in terms of the Public Transport Network Grant (PTNG) (previously the Public Transport Infrastructure and Systems Grant (PTISG)) framework as set out in the 2015 Division of Revenue Bill (DORB).

(d) MyCiTi recurrent costs[4], as recorded in the Business Plan, must be planned to be covered by:

1. Fare revenue and other system revenue;
2. The Network Operating component of the PTNG (previously the Public Transport Network Operating Grant (PTNOG)), as provided for and to the extent permitted by the terms of the PTNG framework as set out in the 2015 DORB or by way of an exemption granted in terms of the relevant Division of Revenue Act;

[3] Council resolution C 54/10/12 of 31 October 2012 entitled 2012 MyCiTi Business Plan: Phases 1A, 1B and N2 Express of Cape Town's MyCiTi Integrated Rapid Transit System (referred to as "the 2012 MyCiTi Business Plan" below).

[4] MyCiTi recurrent costs are widely defined and encompass all operating costs arising from: direct vehicle operational costs; including legitimate secondary charges for support services, but excluding depreciation where capital assets are grant-funded, the automated fare collection, the advanced public transport management system infrastructure (previously referred to as the control centre), station management, MyCiTi marketing, management and oversight of MyCiTi operations by the relevant TCT departments, services by other City departments arising as a result of and forming a core and necessary part of the provision of MyCiTi services.

3. The relevant portion of the Public Transport Operating Grant (PTOG), once the administration of this grant is assigned to the City, as set out in the Business Plan;
4. Council's own funds, subject to the City's commitment to funding MyCiTi recurrent costs not exceeding an amount up to and including the equivalent of 4% of property rates income (as approved by Council's in its decision of 31 October 2012 (item C 54/10/12).

(e) The principle was adopted that non-core costs incurred by other departments indirectly related to MyCiTi services, such as costs related to cleansing and landscaping, but actually more related to improvement of municipal services in areas serviced by MyCiTi, not be treated as MyCiTi operational costs, except for an initial period as required for the relevant departments to budget appropriately for such costs in future years, but that, after such initial period the costs be absorbed by the City, as set out in more detail in the 2012 MyCiTi Business Plan.

(f) Costs must be contained and fare levels and levels of service must be set such that the funding level established in (d) is not exceeded, unless national funding is secured to cover the difference.

(g) The Commissioner: Transport for Cape Town in consultation with the Chief Financial Officer, were required to engage with national Department of Transport and National Treasury with a view to establishing an agreed approach in the long term that limits the City's contribution to MyCiTi to a maximum of approximately the level established in recommendation (d) and that, if an alternative solution emerges in discussion with these national departments, they need to report back to Council for its approval.

(h) The Compensation Policy attached as Annexure F to the 2010 Business Plan was rescinded and the Compensation Policy attached as Annexure F to the 2012 MyCiTi Business Plan, was adopted and applied to Phases 1A, 1B and N2 Express.

(i) Council delegated to the Commissioner: Transport for Cape Town the authority to determine, in consultation with the Chief Financial Officer, the compensation to be offered to minibus-taxi operators, and to determine the process to be followed regarding the offer and payment of such compensation, including the authority:

(i) to effect amendments to Annexure F of the 2012 MyCiTi Business Plan as may be necessary to ensure the successful conclusion of the compensation process, provided that -

(1) the total amount of compensation to be paid in accordance with the amended Annexure F does not exceed the amounts for compensation payments approved by Council;

(2) any such amendments are noted at the first possible Council meeting, taking into account dates of closure of agendas for Council and its committees;

(ii) to exercise any authority reasonably necessary for, or incidental to, the effective implementation of the Compensation Policy, including the authority to sign any compensation offer on behalf of the City, subject to proviso (i)(1) above.

As a consequence, the following summarises important technical detail relevant to the Council approval of this Update.

1. The revised projected MyCiTi expenditure, income, capital and compensation per financial year is set out in Chapter 9 of the Update. In order to implement the service as provided for, Council is required to budget for the necessary expenditure and income, taking into account the provision in paragraph 4 below.
2. In expanding the MyCiTi service some non-core costs arise which are indirectly related to it, but are actually more related to improvement of general municipal services in areas serviced by MyCiTi, such as cleansing and route landscaping. However, given that the infrastructure relating to these services is implemented as part of the MyCiTi project, in order to facilitate appropriate budgeting, and provided that the design of the related infrastructure is supported by the relevant line function department, the associated recurrent costs should be absorbed by MyCiTi for an initial period of up to 18 months; but thereafter should be absorbed by the relevant line department. This is set out in more detail in the 2015 Business Plan Update and is in line with a Council decision taken in October 2012 (item C54/10/12) relating to such non-core costs.
3. The current approach as provided for in this Update has been informed by a moderation exercise. This is largely being implemented in two stages: in October 2014 and early 2015. A moderation exercise is done regularly in a public transport service, especially regarding new services, and seeks to align the supply of services to revealed passenger demand so as to ensure that, while the MyCiTi service remains a responsive, world-class public transport system, it also achieves long term financial sustainability.
4. In order to ensure ongoing viability and sustainability, to contain costs and increase revenue, and to comply with paragraph 1 above, the following is required:

    i) The moderation exercise that the City has embarked upon and has begun to implement from 1 October 2014, as set out in paragraph 4.6 of this Update;

    ii) Further actions that TCT is in the process of taking to reduce costs, in terms of the contracts with the current VOCs, including

        a. re-assessing fuel consumption levels as currently provided for in the vehicle operator contracts regarding relevant vehicle types to ascertain whether there is over-provision and reducing the assumed consumption accordingly;

        b. reviewing costs of maintenance and fuel consumption regarding vehicles procured after the initial fleet in order to assess whether these can be lowered;

        c. re-allocating current and allocating future kilometres amongst the VOCs to the lowest cost VOC within the constraints of the contracts; and

d. reviewing maintenance costs after 5 years in relation to the relevant vehicle types; and to the extent feasible, renegotiating elements of such contracts to minimise expenditure.

iii) In infrastructure and operational design, discretion should always be exercised within reason in favour of an optimal public transport solution that also minimises operational cost and maximises system revenue.

iv) Other MyCiTi contracted services should be contracted and managed so as to reduce operating expenditure while maintaining an adequate improved public transport service.

v) Fares should be set so as to increase revenue as much as is feasible, taking into account cost efficiencies such as the peak-to-off-peak differential, but with due regard to passenger affordability.

vi) Every effort must be made to increase revenue generation activities in areas where MyCiTi operates, such as expansion of advertising, expansion of and higher fees for managed parking, and exploitation of retail opportunities. To incentivise this activity within TCT, the revenue earned should be recorded as revenue to the MyCiTi system.

vii) An increasingly sustainable city, resulting in a reduction of operational transport system costs, should be pursued through:-

a. The progressive implementation of transport oriented development (TOD) measures as confirmed by Council in June 2014 (item C59/06/14) in its approval of the IPTN 2032; and

b. The progressive implementation of travel demand management (TDM) measures, including but not limited to –

- Engagement with the education sector of government and the private sector to consider staggered schooling start hours to level out peak demand both on roads and in public transport;
- Pursuing flexible work programmes (including flexitime, alternative working times compressed work weeks).

5. The lessons learned from Phase 1 and the N2 Express should be recorded, and a best practice design review should be undertaken to inform the rollouts and future planning of the remainder of the current phases, Phase 2A and beyond, including the system plans and the business plan for future phases.

3. Introduction

3.1. Purpose of document

The purpose of this document is to update the 2012 MyCiTi Business Plan based on the extent of the MyCiTi service that has been implemented to date. At the beginning of each chapter there is a brief indication of what has been achieved and the key challenges faced in respect of Phase 1 and the N2 Express. This business plan update also reviews the performance of the current MyCiTi system with particular attention to identifying assumptions which have not materialised and, in the light of the lessons learned and emerging best practices, set out what needs to change going forward and how the 2012 Business Plan needs to be amended. The body of each chapter covers ground that was, to some degree already covered in the 2012 MyCiTi Business Plan, however the text and content is somewhat altered as a result of refinement of thinking that has since occurred prior to the previous (2012) plan.

The most significant change since 2012 is that the roll-out is much further advanced, and this enables an assessment of the envisaged approach based to a much larger degree on actual passenger numbers and revenues as well as actual service costs, rather than the modelled estimates upon which the 2012 Business Plan was based.

The document largely follows the structure of the 2012 Business Plan. However, the initial chapters of the 2012 Business Plan document are replaced in this Update by Chapter 4 which examines at a strategic level the financial drivers underlying the project, based both on current project experience as well as analytical work into the financial feasibility of full roll-out that has been undertaken since 2012.

3.2. Progress since 2012 Business Plan

This paragraph summarises some of the key activities that have taken place since the 2012 Business Plan.

Tenders and contracts

- A tender was awarded for the provision of an automated fare system and the initial fare system, which used paper tickets, migrated to an electronic card system.
- A tender was awarded for the Advanced Public Transport Management Systems (APTMS), previously referred to as the control centre. Unfortunately this contract was terminated on 20 February 2014 as a result of non-compliance with tender conditions and a new contractor is being appointed.
- A five-year station management contract took effect at the end of April 2013, and became fully operational in May 2013. From September 2014 the Station Management Contractor has been responsible for managing 34 MyCiTi stations. This includes the management of the facilities, security and cleaning, cash management

and payment systems, passenger management, access control, validation and fare evasion, technical maintenance, communication and managing events.

- The Advertising Management Contractor was appointed in October 2012. The contractor pays the City for advertising space in the system, and is responsible for the maintenance and cleaning of stops at no cost, including dealing with vandalism.
- Two tenders have been awarded for retail, which include sites at Civic Centre station and vending machines in various MyCiTi stations. A concession agreement has been concluded with both contractors to whom tenders were awarded.
- A tender was awarded in October 2012 for the development of the City's Integrated Public Transport Network (IPTN) plan plus the following deliverables, namely: IPTN operations plan; IPTN Implementation plan, Lansdowne Wetton Corridor (LWC) Conceptual design, and the LWC operational and implementation plan.

Vehicle fleet

- A fleet of 118 high-floor trunk service buses (86 x 12m rigid and 32 x 18m articulated buses) were procured for Phase 1, operated by the three vehicle operating companies (VOCs). A fleet of 221 low-entry buses (9m Optare Solo SR buses) have been supplied under contract by Busmark 2000 (Pty) Ltd. These vehicles include provision for spare fleet to be used whilst vehicles are undergoing necessary maintenance. In March 2013 Volvo SA (Pty) Ltd was awarded a contract to supply 20 x 12m rigid (solo) low-floor buses and 20 x 18m articulated low-floor buses for the N2 Express service route. All 20 of the 12m buses have been assembled and will be in service during 2015.

Asset management

- The 2012 Business Plan provided for various MyCiTi movable and fixed assets to be used, controlled or managed by contractors. This required various processes including in principle Council approval in terms of regulations 5 and 34 of the Municipal Asset Transfer Regulations (MATR) of the Municipal Finance Management Act (56 of 2003), which were successfully concluded and assets used on this basis.

Fare system

- The stepped distance-based fare system was implemented on 3 August 2013, permitting distance-based pricing capped at a defined maximum fare. It allows discounts to be offered, depending on the time of travel and the type of travel package loaded on the EMV smartcard.
- The scheduled Public Transport fare policy has been approved.

Establishment of Transport for Cape Town - Transport authority

- To facilitate the full rollout and achievement of integrated, interoperable and intermodal transport across Cape Town, a governance structure was set up through the establishment of the City's transport authority, Transport for Cape Town (TCT).
- Transport for Cape Town Constitution Bylaw, No. 7208 was gazetted in 2013, and the TCT Organisational Structure was approved, giving effect to its eight departments, and paving the way for the TCT Long Term Strategy and the establishment and functionality of the Municipal Land Transport Fund (MLTF).

Application for assignment of Functions

- Contracting Authority: Application in terms of an approved business plan and related 10-year budget was made for the assignment of the Contracting Authority function to the City through TCT. This will ensure that all scheduled public transport services, are managed in a collective, integrated and efficient manner together with the MyCiTi contracts.
- Municipal Regulatory Entity: Application in terms of an approved business plan and related 10-year budget has also been made for the assignment of the Municipal Regulatory Entity (MRE) function to the City, through TCT. This will ensure that all public transport services, whether scheduled or on demand are regulated by the City

CITP and IPTN

- TCT's Comprehensive Integrated Transport Plan (CITP) 2013-2018 was approved by Council in December 2013 and the annual mini-review was approved on 25 June 2014. TCT's Vision of One and the objectives identified to realise this vision are detailed in the CITP and this document.
- The City's 2032 IPTN was approved by Council on 25 June 2014. The purpose of the IPTN project is to develop an integrated public transport network and operational plan for the metropolitan area, to improve mobility and access for all residents, with estimates of the total system costs. Part of the approval of the 2032 IPTN, was the adoption` of TOD land use assumptions and principles to ensure the long term sustainability of public transport and urban development.

Making MyCiTi Sustainable

- In 2013 an assessment of long-term operating costs was undertaken to assess the financial parameters of road-based public transport as rolled out in terms of the 2010 parameters, which were adapted to consider financial constraints. This is discussed further below.

Moderation Exercise for Phase 1A

- The City's has embarked on a rigorous moderation process to better tailor Phase 1 services to revealed demand and better align costs with revenues. This is discussed in some detail throughout this document.

Start of the planning for IRT Phase 2

- The draft conceptual design for the IRT component of the Lansdowne-Wetton Corridor (Phase 2A) is complete. The detailed design work required for Phase 2A will commence with a review of the conceptual design.

Start of planning for Blue Downs corridor

- Preparatory planning has started on the Blue Downs corridor, based on the 2032 IPTN, considering the future role of both rail and road based public transport.

MyCiTi Performance

- Since its launch in May 2010 until January 2015, approximately 23.3 million passenger journeys have been made on the MyCiTi rapid transit system, many of whom use its rapid bus service on the dedicated bus lanes. A total of 3 881 667 passenger journeys were recorded during the last quarter of 2014. By January 2015 the roll-out of Phase 1 and the N2 Express was 68% complete. When the Phase 1 and N2 Express rollouts are fully complete the system is projected to carry 75 000 passengers per day.
- Based on the feedback received directly from the public as well as in media reports, there is overwhelming support and appreciation for the quality of the MyCiTi service.

3.3. Overview of project status at December 2014

Table 3-1 below indicates the revised completion dates as by the end of December 2014 compared to the planned dates of the various Milestones noted as part of the October 2012 amendments to the IRT Business Plan.

3.3.1. Phase 1A

Most of the Phase 1A routes have been implemented and are currently operational. The remaining routes for Phase 1A are planned to become operational during 2015.

Phase	Original Planned Date	Revised Date[5]
1.1 Phase 1A: Milestone 1 Inner City Routes	October 2012	Milestone 1.1 - operational Milestone 1.2 - operational Milestone 1.3 - operational Milestone 1.4 - operational Milestone 1.5 - operational Milestone 1.6 – operational
1.2 Phase 1A: Milestone 2 Table View Routes	December 2012	Milestone 2.1 – operational Milestone 2.2 – operational Milestone 2.3 – operational
1.3 Phase 1A: Milestone 3 Atlantis	February 2013	Milestone 3.1a – operational Milestone 3.1b – operational Milestone 3.2 – operational Milestone 3.3 – July 2015 Milestone 3.4 – July 2015
1.4 Phase 1A: Milestone 4 Du Noon	November 2013	Milestone 4.1 – Operational Milestone 4.2 – July 2015
1.5 Phase 1B	October 2014	Milestone 5.1 - July 2015 (trunk) Milestone 5.2 – Start October 2015 (some feeders)
2 N2 Express Service	December 2013	First phase of service which comprises two routes, one in Mitchells Plain and another in Khayelitsha, which were launched on 5 July 2014, to be followed by a second phase, which comprises another route in each of Mitchells Plain and Khayelitsha, after the delivery and commissioning of the 18m Volvo buses. The other routes in Mitchells Plain and Khayelitsha are currently under review to ensure that the routing is aligned to passenger demand.

Table 3-1: Project Status

3.3.2. Phase 1B

The routing of services between the Edgemead, Bothasig, Richwood, Century City, Montague Gardens, Summer Greens and Milnerton areas are currently under review based

[5] The roll-outs described above are subject to the following:

- The implementation of services by the Vehicle Operators remains on track and in line with the programme.
- The operating licenses can be put in place in line with the proposed launch dates.
- The delivery of vehicles is not delayed any further.

on lessons learned during the moderation process. The following routes have been planned as part of Phase 1B:

Service type	Route number	Route name
Trunk	T04	Du Noon *(possible extension to R27 via the recently constructed Sandown Road)* - Montague Gardens - Century City
Feeders *(under review)*	260	Richwood - Century City
	261	Montague Gardens - Salt River via Maitland
	262	Bothasig - Woodbridge Island
	264	Summer Greens - Century City
	265	Edgemead – Du Noon

Table 3-2: Phase 1B

3.3.3. N2 Express Service

The first MyCiTi services (i.e. two eastern N2 Express routes) started operations in Mitchells Plain and Khayelitsha on 5 July 2014. These include the following:

- Route D01 (i.e. Khayelitsha East to Cape Town Civic Centre); and
- Route D03 (i.e. Mitchells Plain East to Cape Town Civic Centre).

The other two western N2 Express routes are currently being assessed to ensure alignment with actual passenger demand.

With the N2 Express service, Mitchells Plain and Khayelitsha residents can link directly at the Civic Centre with services around the central city, the West Coast and Atlantic Seaboard as part of the expanding MyCiTi network. It should be noted that the new N2 Express service does not replace existing public transport services but offers a supplementary service to provide additional capacity.

3.4. Summary of changes since the 2012 Business Plan

The most significant changes since the 2012 Business Plan represent more a deepening of the detail than any new direction, especially in respect of the N2 Express, which at the time of the 2012 Business Plan was at an early conceptual stage, but is now operational; and changes in financial projections and the implications arising from that.

This Update has been drawn up after the long term operating contracts with vehicle operating contracts have been signed and after rollout of MyCiTi has progressed sufficiently to enable operational expenditure and revenue to be reviewed based on significant actual expenditure, and to revise initial projections accordingly. The operational experience gained

since the launch of MyCiTi services in 2010 has provided the basis for deeper insight into the financial model that is needed to support MyCiTi.

In addition, Transport for Cape Town was established in 2012 and its Constitution Bylaw, No. 7208, gazetted in 2013. The adoption of the organogram for Transport for Cape Town has transformed the institutional environment in which the MyCiTi project is located, and will operate.

Regarding financial projections the most significant change is in relation to fare revenue projections, which, based on actual experience are considerably lower than was anticipated due to key assumptions not materialising. This was despite vehicle kilometres being higher than was anticipated for various reasons as spelled out below.

A further change has been in the conditions relating to the extent of operating costs that could be funded from national grants. From the outset national government has maintained that direct vehicle operating costs had to be funded by a combination of fare revenue, PTOG where applicable (i.e. the grant currently used to support provincially subsidised services where these services are replaced by MyCiTi) and council's own revenue.

However, at the time of the 2012 Business Plan, once national government had agreed that the PTIS grant could cover operational costs, there was no restriction on the extent to which so called 'ancillary costs' could be funded by national grants. This changed in the following financial year where the framework now states that only half of such costs can be covered by the grants (and 70% in the initial two years).

While the 2012 Business Plan did not envisage fully funding ancillary costs from grant income the conditions imposed subsequently has restricted the revenue available from that source.

The limit placed by Council whereby a maximum of the equivalent of 4% of property rates may be used to fund MyCiTi operational costs has not changed in the 2015 Business Plan Update. However, changes have been required, devised through the moderation exercise, to limit expenditure and increase revenues so as to remain within the 4% cap.

3.5. Overview of the document

Chapter 4 - Enhancing financial viability of MyCiTi operations

In line with the current focus on ensuring financial viability, Chapter 4 analyses the key drivers of MyCiTi financial viability. While this was covered to some degree as one of the sub-sections of Chapter 4 in the 2012 Business Plan, it is covered in much greater depth in this Update. The chapter indicates the types of adjustments required to MyCiTi services in order to make them financially sustainable, assuming a continuation of national grants and a contribution to operating costs from the City equivalent to 4% of property rates.

Chapter 4 draws on the study entitled 'Making MyCiTi Financially sustainable' (see Annexure F for more details). The 'Making MyCiTi Financially Sustainable' study was concluded after

long-term vehicle operator contracts were signed and was able to include knowledge of these costs into its findings, to project costs assuming MyCiTi is rolled out across the whole metropolitan area, in line with initial plans. The conclusion from the latter study is that under all feasible scenarios for extending MyCiTi across the metropolitan area, substantial operating subsidy support will be required from national government. Assuming a comprehensive roll-out based on the concepts initially embodied in the first phase, where all road based systems are replaced by MyCiTi, the levels of operating subsidy are prohibitively high. However, scenarios where MyCiTi serves only part of the market and a significant portion of minibus-taxis continue to operate are affordable at a reasonable level of national operating subsidies. This is referred to as a 'hybrid MyCiTi minibus-taxi' approach. Another important conclusion from this work is the extent to which Cape Town's current demand patterns drive costs higher. Long, 'tidal flow' trips, where users mostly commute in one direction to work in the morning and the reverse direction in the evening, with very high peak and very low off-peak demand are extremely expensive to service. The City needs to pursue and implement Travel Demand Management (TDM) and Transit Oriented Development (TOD) measures to address the demand profile in the medium to long term.

The study reiterated the need for regular moderation of services (especially a few months after a new service have started), and this chapter reports on the moderation exercise undertaken by the City to evaluate and recalibrate the service.

The moderation exercise which was conducted on each of the routes rolled out entailed various operational efficiency improvements as well as vehicle rescheduling. The MyCiTi system moderation exercise has identified significant planned cost savings, as well as measures to improve system revenue, which are in the process of being implemented, without substantially reducing service levels.

This chapter, read in combination with Chapter 9, entitled 'Funding and Financial Management' emphasises the need for national government and the City of Cape Town to work together to clarify the long term fiscal envelope within which the system is to be developed further, and establish feasible standards and coverage in this context, such that the City's financial commitment is not extended beyond what is reasonable and fiscally sound and at the same time the rollout can proceed as determined in the IPTN.

Chapter 5 - System Plan

The chapter on the System Plan introduces the Integrated Public Transport Network (IPTN) 2032 and associated key principles which were approved by Council in June 2014. It also discusses key system planning lessons learnt based on revealed information since the 2012 business plan and describes the moderation exercise which better aligned supply to reveal demand. This chapter details the result and impact of the moderation exercise on the system plan including route changes as well as surveys and data analysis. The chapter primarily provides the system plan detailing the route descriptions and sets out the revised rollout plans and planned launch dates for the outstanding Phase 1 and N2 Express milestones. Levels of service standards and guidelines are proposed for the MyCiTi service.

Chapter 6 - Infrastructure, related design and cost issues

This chapter draws on a review of system performance, linked to the moderation exercise, which has been undertaken regarding the Phase 1 routes that were operational by mid-2014. This work has been used to identify opportunities to improve traffic conditions and therefore improve cycle times on routes. This chapter deals with enhanced bus priority measures and traffic signal improvements in support of MyCiTi arising as a result of this work.

Other material deals with the issue of high-floor versus low-entry buses, and the fact that there has been a reversion to using conventional flexible road pavement at intersections rather than re-enforced concrete.

Chapter 7 - Business Structure and Contractual relationships

Chapter 7 sets out shifts in the management of contracts that have taken place as a result of restructuring following the launch of TCT. The chapter discusses the different vehicle ownership models used for Phase 1 and the N2 Express. With respect to the VOCs, the assignment of routes and the control of drivers have also evolved since the 2012 Business Plan and are noted here. The moderation exercise is discussed in the context of the business structure and its impact on existing contracts, such as the ability to re-allocate services to the lower-cost operator. Developments with future MyCiTi fleet requirements and procurement are discussed, as are fare system risks, informed by the experience since the 2012 Business Plan was compiled. The management of the APTMS contract is dealt with following the termination of the contract, and the risks associated with this. The optimisation of station management is discussed as well as parking management focussing on parking in the vicinity of MyCiTi.

Chapter 8 - Institutional approach and current staffing structure

At the time of the 2012 Business Plan the creation of Transport for Cape Town was only at its initial stages. This chapter focuses on new approaches since the launch of TCT in 2012.

Chapter 9 – Funding and Financial Management

This chapter updates the projected costs and revenues that were included in the 2012 Business Plan. The most significant changes relate to the fare revenue which is projected substantially lower in the 2015 Business Plan Update than in the 2012 version based on analysis of the revealed data rather than assumptions.

While the 2012 Business Plan highlighted the financial risks in 2015 these are informed by the actual experience of the current roll-out. Chapter 9, on financing MyCiTi, needs to be read with Chapters 4 which outlines the key factors underpinning issues of affordability.

Chapter 10 - Industry Transition

The Industry Transition chapter focuses on changes to the compensation model for operators since the 2012 Business Plan. The industry transition approach to the N2 Express

Service was largely developed after the 2012 Business Plan and is discussed here to a level of detail that had not been developed as the time of the 2012 Business Plan.

The 'hybrid MyCiTi minibus-taxi model' introduced in Chapter 4 is discussed in this chapter in so far as it related to industry transition. This discussion was not contained in the 2012 Business Plan.

Chapter 11 - Public Transport Law Enforcement

The 2012 Business Plan did not contain a chapter on Public Law Enforcement. The chapter in the 2015 Update is a short chapter, aimed at briefly highlighting key developments since 2012 arising from co-operation between Transport for Cape Town and the Safety and Security directorate. The chapter spells out key performance indicators to be used to measure the performance of the Transport Policy Command.

Chapter 12 - Marketing, Communications and Customer Relations

There have been few changes in the Marketing, communication and customer relations area. This chapter notes the changing context with new marketing campaigns to support the growth of passengers from different market segments and in response to changing operating conditions and specific operating challenges such as very full buses in the peak.

Chapter 13 - Risk Management

The risk management chapter is a new chapter and focuses on the major areas of potential risk that face the MyCiTi system.

4. Methodology amendments to enhance MyCiTi financial viability

Chapter Summary

The issues dealt with in this Chapter are examined in much greater depth than in the 2012 Business Plan focusing on the factors underlying the recurrent costs of MyCiTi based on the operational experience to date. This chapter draws on data and insights which have only become available in the period since the adoption of the previous business plan, including a study of the long term operating cost implications of rolling out MyCiTi across the metropolitan area, and explains the planned moderation exercise undertaken to achieve greater efficiencies in matching supply to demand, and to do so within financial constraints. It proposes new approaches going forward, such as the need to combine the formal sector with ongoing minibus-taxi services (i.e. a MyCiTi / minibus-taxy hybrid model, or the 'hybrid model' for short), and the need for transport demand management (TDM) strategies and transit oriented development (TOD).

Advances on understanding of financial drivers of public transport related methodology amendments

This chapter is aimed at explaining the key drivers of MyCiTi sustainability and is focused on advances in understanding and appropriate responses, including:

- Having rolled out significant MyCiTi services, a much more solid basis exists to understand demand and supply of public transport and related costs and revenues. These include factors such as the nature of peaking, practical bus capacities (as opposed to regulated limits) and how a range of operational issues drive actual costs.
- The analysis of long term costs based on initial Phase 1 experience, projected to the metropolitan area as a whole, has provided a much better understanding of what is feasible as the system is rolled out further with amended integrated transport methodology.
- The need for a hybrid model, where minibus-taxis are retained and better regulated as part of the solution has emerged from the work on long term system wide costs – towards an economic self-sustaining model.
- The link between land use, demand patterns and costs is now more widely accepted and understood, along with the importance of addressing this issue and measures to do so, towards TOD, as indicated in the IPTN 2032.
- MyCiTi has undergone its first systematic exercise of assessing actual against projected demand and developed methodologies to moderate services accordingly in order to better align them with actual demand and balance service improvement with deficit reduction.

Challenges

- The failure of the APTMS contractor and the resultant inability to get the system running properly thus far significantly limits the extent to which some of the required detailed information regarding bus movement, schedule compliance and driver and bus optimisation is available for analytical purposes.
- Although some of the key cost and income drivers are better understood, and there is a wider acceptance of what is required, translating this into actual changes in design and operational practices tends to prove much more difficult for Phase 1. This will however be completely changed for the remainder of the planned integration of Cape Town's transport systems.
- There is a risk that the moderation process, which aims to recalibrate operational cost, reduces the service exposure to potential passengers which could reduce passenger demand which influences revenue collection. It is important to maintain a balance between improved efficiency, minimising operational costs and maximising revenue.
- While modelling capabilities and survey information are significantly improved there remains a need to continue improving these further.

Lessons learned and included in this Business Plan Update

- This Update is based on significantly more accurate financial projections informed by practice rather than being based largely on modelled outcomes.
- Attempts are being made even in Phase 1 to reconsider how to address competition from minibus-taxis, including potentially allowing them to remain on some routes to the extent this improves services while lowering costs.

4.1. Introduction

This chapter examines some of the key factors determining the viability of MyCiTi operations. It does so first at a high level before discussing work TCT has undertaken to establish the financial feasibility of extending MyCiTi to the entire metropolitan area, and the 'moderation' exercise to analyse existing services and rationalise the service and balance supply with revealed passenger demand. Both these investigations have dealt with cost drivers at a more detailed level.

4.2. Cost factors in the provision of public transport services

There are factors that make the provision of public transport in Cape Town, and other cities in South Africa (as well as other developing countries), in general more costly.

Urban sprawl

Cape Town's structure is generally characterised by dispersed urban development and inequitable access, a result of segregated apartheid planning. Population densities are, on average, extremely low by international standards and access is further constrained by mountain and sea, which leads to even longer trip distances than are suggested by density figures. Income levels of much of the passengers using public transport are generally low. The dispersed urban form leads to longer commuter travel distances which negatively impacts fleet requirements, resulting in higher costs and longer travel time. In summary urban sprawl results in large passenger loads for a short period of time and requires relatively high fleet requirements which have to travel long distances to reach destinations. This increases operational costs, whilst on the other hand revenue collection is relatively low as the fares have to be affordable for low income captive public transport users.

High peak-to-base ratios

The capacity requirements of a system are determined by the worst peak hour demand which is defined as the design volume. Systems with high peak hour demand requirements and low off-peak usage are expensive to run, since much of the investment (capital and operational) is significantly underutilised outside of the peak periods and since, to some extent, this pushes up the number of drivers required. In Cape Town, as in all South African cities, public transport demand is concentrated in peak periods to a greater degree than in many other countries. Most passengers are commuters, travelling to work in the morning and returning home in the evening with relatively low number of passenger trips for other purposes. The only significant exception to this is scholar trips linked to access to education.

Single direction, point-to-point demand

Coupled with urban sprawl has been the development of dormitory towns. The commuter-based demand combined with urban form, with residential areas at a distance from places of work, results in single-direction demand from point to point. Thus vehicles travel full in one direction during the peak, but empty on their return trip. This is inefficient, but will remain a reality until more mixed-use developments are realised or work times become much more varied. By increasing the number of passengers in the return trip, revenue is significantly increased without increasing operational costs.

These travel patterns also result in very little boarding and alighting along the route, leading to significantly less revenue compared to a service where there is a high degree of seat renewal. Dense mixed-use corridors create a much better environment for consistent seat renewal along the route.

Low-income levels amongst most public transport users

South Africa has high levels of income inequality, with a significant proportion of public transport users having low incomes. This, combined with long trip distances and other factors increasing costs, leads to a higher subsidy requirement. Where a system aims to

attract both low- and middle-income users, the pricing of services is a challenge. The potentially higher fares affordable to middle-income users are not affordable to low-income users, who make up most of the demand.

High formal sector costs

Formal sector wages in South Africa are relatively high, given average income levels, especially for some categories of workers. The public transport sector is fairly labour-intensive, which increases costs. Regulation in the formal sector also elevates the cost structure.

Strong private car culture and poor perception of public transport

The difficult cost environment faced by the public transport sector in Cape Town is combined with high levels of car convenience and a strong private-car culture established over decades. An extensive and well-planned road network (which is very expensive to maintain) also contributes to choice users tending to use their private vehicles over public transport. Parking is relatively easy and inexpensive compared with many cities internationally. The established private car orientation is difficult to shift since the space required by private cars makes implementing the higher densities required for successful public transport systems difficult to achieve.

A further factor is the poor perception of public transport in terms of safety, security, reliability, convenience and comfort.

Factors affecting the MyCiTi cost structure

MyCiTi seeks to offer a considerably higher level and quality of service than is provided by the current road-based public transport operators, at fare levels that are more or less comparable. Key considerations include the degree to which a service is available at certain locations (coverage, service frequency, hours of operation), and the quality of the service (speed, attractiveness, comfort, convenience, safety, security and system coherence).

The MyCiTi methodology has seen a shift from a system aimed at peak-period weekday commuter travel to a comprehensive public transport service throughout the day and over weekends. Vehicles are safe and comfortable; travel times are shorter, because of dedicated trunk-route busways and pre-boarding fare collection, and the off-peak services are more frequent.

During peak demand periods, the MyCiTi service can be provided more cost-effectively than the current service due to the following features:

- Fleet size can be matched with projected demand while maintaining relatively high service frequencies;
- Different vehicle sizes (18m, 12m and 9m) facilitate matching services to demand;

- Dedicated roadways and bus priority measures allow vehicles to move faster in peak periods, which in some cases allows for more than one trip per vehicle in the peak period. This reduces the trunk vehicle fleet size and maximises the use of the fleet;
- Rapid boarding and alighting of passengers, including special needs passengers, minimises bus dwell times at stations (especially at high volume stations), which positively influences operational costs;
- The operations control centre is responsible for tracking all vehicles and monitoring compliance with the schedule, among other functions. This minimises wastage and ensures that demand and supply are optimised; and
- Attracting increasing numbers of users from private vehicles reduces operating cost per passenger through economies of scale, provided that demand is not overly peaked, or concentrated in areas which necessitate long travel distances.

On the other hand, there are features which increase costs when compared with the historical bus system. These include:

- Increased capital outlay and other costs arising from dedicated roadways and other fixed infrastructure that must be provided and maintained;
- A higher frequency of service during off-peak periods increases operational cost;
- Stations and an independent fare collection system need to be operated, and extensive security must be provided on the system;
- Additional costs associated with the advanced public transport management system (APTMS) technologies and an operations control centre, which controls and schedules vehicles in real time, as well as the departments required to manage the various contracts and the system as a whole; and
- The replacement of current informal business practices with a more formal system, with improved employment conditions.

A critical contributor to cost-effectiveness is the difference between peak and off-peak demand. The overall capacity of the system is driven by the requirements of the peak, but much of this is idle during the off-peak period. By smoothing the peaks and increasing off-peak demand, costs can be reduced and income increased.

The traditional approach to public transport deals with low demand in the off-peak period by cutting back severely on services. On many routes, the existing bus operators do not provide any off-peak services, while minibus-taxis wait to fill up with passengers before proceeding. MyCiTi provides an acceptable and predictable level of service in the off-peak periods. While this provides the basis over time to smooth the peaks and increase off-peak usage, it initially increases the cost-to-revenue ratio.

4.3. The National Public Transport Strategy and Action Plan

Cape Town has been developing its public transport approach in the context of national government's Public Transport Strategy and Action Plan of 2007. The standards guiding the planning and provision of public transport set out in this document have significant implications for financial viability, given the cost factors explained above, and require review.

4.4. Modelled and actual costs and revenues

In planning Phase 1 extensive cost modelling was done based on cost and revenue estimates to optimise the system plan against financial viability. Initially the modelling was based on estimated revenue figures using the EMME transport demand model developed in 2010 under assumptions current at the time. Costs were based on general transport sector experience.

The modelling showed that while vehicle operations could be covered by fare revenues to a significant degree, other elements, including stations and station services, the APTMS, the fare system and the overall management of the system, required funding from other sources to a greater or lesser degree. However, as the system has been implemented, contracts tendered or negotiated, and services run, actual costs and revenues have emerged. In many cases these have been less favourable than those initially modelled.

The 2012 Business Plan said it was "evident that contrary to initial estimates, the ongoing subsidy requirement for the system once rolled out across the whole city could significantly exceed the current subsidy levels to provincially operated bus subsidies. While it should be possible to manage risks in the medium term where coverage is limited, there are greater risks associated with a wider roll-out over the long term, which will need to be contained".

In fact, lower-than-expected fare revenues, due to key assumptions not materialising during the actual rollout of Phase 1 and the N2 Express, have emerged. Further detail is provided in par 5.2.

4.5. Projected long-term operating costs

In 2013 concern around the implications of emerging costs and revenues led to a study into the long-term cost implications of extending MyCiTi to the whole metropolitan area. The full report, 'Making MyCiTi Financially Sustainable: Projected long-term costs for road-based public transport; projected operating deficit scenarios for completed MyCiTi system and strategies for operating deficit reduction and financial risk management', is attached as Annexure F.

This report sought to apply, under various sets of assumptions, the costs that were either tendered or negotiated in the Phase 1 long-term contracts to a metropolitan-wide rollout. The report modelled the financial implications of a full rollout scenario based on the designs

contained in the 2010 Business Plan before adjusting these in various ways. The key variables used in the modelling exercise included:

- Overall demand growth;
- Extent of system coverage, including shifts from other modes such as rail, bus and minibus, and the extent of dedicated busway coverage;
- Demand patterns, especially peak to off-peak and reverse-flow ridership assumptions;
- Operating and capital costs for the various vehicle types;
- Station numbers, types and costs;
- Headway assumptions;
- Fare level assumptions; and
- Extent of spare fleet.

Arguing on the basis of the most recent cost evidence that rolling out MyCiTi based on the 2010 designs was not financially sustainable; the study nevertheless concluded that it is financially feasible to extend the MyCiTi system across the metropolitan area, but only under certain conditions. Crucial factors include not only the need to contain unit costs, and enhance fare revenues, but also to understand how patterns of demand drive costs and how such patterns need to be managed and addressed to improve the affordability of the system. The study showed that financial feasibility is dependent on the receipt of large operating subsidies from national government, or the development in co-operation with national government of new city-owned revenue sources.

The study confirmed the critical importance of peak to off-peak demand ratios, counter-flow demand, seat renewal and travel distance.

It confirmed the validity of the BRT model, but emphasised the need to pursue a 'hybrid' approach in which rather than attempting to fully replace minibus-taxis, a significant portion of the market may need to continue to be served by minibus-taxis. Similarly, it may be appropriate to leave some GABS services in the peak in place. Approaches were investigated to make the different types of service complementary. In the favoured scenario it was assumed that approximately half of the current minibus-taxis would continue to operate.

Key priorities

The study, 'Making MyCiTi Financially Sustainable', set out the following priorities:

Review and refinement of MyCiTi based on Phase 1 experience

There needs to be ongoing review and refinement based on the emerging experience in Phase 1 focusing on ongoing improvement to the system design, close attention to cost-reduction measures, and implementation of a sustainable, integrated public transport model.

This Update is part of this process, and includes a summary of the outcomes of the *moderation process* recently undertaken by the City in para 4.6.

It should be noted that the 'Making MyCiTi Financially Sustainable' report is being reviewed in view of the lower than expected revenues that became clear by mid-2014 and that an updated report will be issued in due course.

Fare levels

Ongoing attention is required to design and calibrate fares optimally. Approaches are needed which maximise revenue and incentivise behaviour change in line with demand management priorities, while ensuring affordability. The moderation exercise determined that there was a need to employ a wider cost differential between the peak and off-peak fares. This will be introduced from the beginning of the 2015/16 financial year.

Vehicle operating costs

Close attention must be paid to minimising unit vehicle operating costs in future price negotiations and introducing price competition wherever feasible.

Hybrid MyCiTi / minibus-taxi approach

The feasibility of various hybrid models needs to be investigated with opportunities for experimentation. This may be done in Phase 1, even where some minibus-taxis have been removed. The implications for infrastructure provision, operational costs and regulatory mechanisms need to be understood.

Travel demand management (TDM)

The study demonstrated that improved financial performance is not driven by increased passenger numbers. Indeed, increased passenger numbers will worsen financial performance unless the additional revenue earned from the increase matches the additional costs incurred. It is the patterns of passenger demand that determine financial performance.

In South Africa there has been a shift towards managing the demand for travel, rather than attempting to manage the supply of road network capacity. This shift can be attributed to the acceptance that supply-side transport improvements to solve the problems created by inefficient land use patterns are impractical over the long term.

Measures are needed to manage travel demand through incentives to attract increased public transport usage, and disincentives to discourage car-oriented travel behaviour, as well as other mechanisms. These should be focussed on smoothing the peak to off-peak demand differential as marginal increases in peak demand results in a disproportionate cost to serve additional peak-period demands.

Ways to smooth the peak include enabling measures such a flexible work programmes or financial incentives such as charging a lower fare to travel outside the peak. Care should be taken not to discourage the shift from car to public transport.

The impact of adjusting supply of services by setting a minimum peak headway through application of the *peak-capping principle* identified in the study needs to be thoroughly understood and coordinated with demand-driven TDM measures, recognising that voluntary change is preferable to forced change. Engagement with relevant stakeholders to encourage more flexible working hours should be prioritised, together with an increased peak to off peak fare differential.

The literature suggests that congestion needs to be acknowledged as a result of growing cities and that increasing levels of congestion in combination with phased transport improvements and targeted TDM strategies can effectively exert a short-medium term influence on travel behaviour and a long term influence on land use decision making towards a more efficient and sustainable city structure.

Mechanisms to influence travel behaviour must be accompanied by the introduction of alternative high quality travel choices. This necessitates careful synchronisation of TDM measures with public transport system improvements.

The principle of 'locking in' the benefits of improved public transport systems is relevant for the selection and sequencing of TDM measures to ensure maximum coordinated impact through measures which make it more difficult for single occupancy vehicular travel (i.e. to make car travel either slower or more costly).

Approaches identified to manage the demand for travel in support of the MyCiTi system include:

- *Voluntary measures:* Voluntary measures are intended to encourage a change in travel behaviour through introducing incentives and promoting awareness of the benefits of public transport and non-motorised transport as well as the negative impacts of private transport.
- *Pricing mechanisms:* Pricing mechanisms encourage changes in travel behaviour by introducing new or changed user charges. The impacts of pricing mechanisms are universal and can be used to balance generalised travel costs and 'lock in' TDM benefits. Pricing mechanisms essentially encourage more efficient use of road space by providing a price based choice when current demand levels are in excess of network capacity.
- *Regulatory measures:* Regulatory measures impose new rules or change existing regulations which govern travel choices to prompt a re-evaluation of habitual travel behaviour. Regulatory measures include parking supply restrictions, periodic vehicle use restrictions and area entry restrictions. The impacts of regulatory measures typically apply universally and impose direct limitations on car users. Regulatory measures can therefore be used to 'lock in' the benefits of transport network capacity supply side improvements associated with the introduction of high quality public transport systems. It is considered that the benefits of the MyCiTi system could be artificially 'locked in' to some extent through introducing supporting regulatory measures.

- *Reconfiguration of physical infrastructure:* Travel behaviour can be influenced by retrofitting transport infrastructure through enhanced road space management practices and implementing bus priority measures. These types of measures have the potential to neither suppress nor induce traffic if appropriately balanced in conjunction with measures to reduce travel demand and the introduction of effective and efficient public transport systems.

The City's TDM strategy is intended to manage the supply and demand of car oriented behaviour to reduce demand for Single Occupancy Vehicle (SOV) travel and redistribute this demand to other modes'. This includes incentives to encourage public transport use and disincentives to discourage SOV private transport.

A broad spectrum of TDM interventions is available. TDM measures that have been applied in Cape Town include the following:

- BMT Lanes (dedicated lanes for public transport), consisting of separate dedicated busways, and semi-dedicated bus lanes in existing roadways for exclusive public transport use in peak periods. This approach requires minimal infrastructure improvements, but increased law enforcement;
- Parking management by adjusting the supply and cost of parking to encourage the use of public transport;
- Improved traffic signal settings to optimise the flow of traffic and changes to network capacity to the advantage of public transport specifically;
- Flexi-time, alternative working times and compressed working hours;
- Ride-share programmes (also referred to as car-pooling);
- Freight management (off peak delivery times of goods).

Other typical TDM measures that can be considered in Cape Town, as public transport systems are improved, include the following: Public transport subsidies for companies or developments which actively support public transport usage; network TDM capacity improvements by increasing or decreasing in network capacity to the advantage of public transport specifically; private vehicle restriction zones; taxation policies to discourage private vehicle subsidies and tax rebates where public transport is actively promoted; congestion pricing and travel pricing (e.g. fuel levies).

Transit-oriented development (TOD)

While travel demand can be managed to a degree, the study showed that ultimately the most important factor is improved land use, sometimes referred to as transit-oriented development (TOD). An optimum mix and intensity of urban activity must be strategically located along existing and planned higher-order public transport infrastructure to improve the ratio of peak to off-peak services, stimulate greater seat renewal and reduce the extent of tidal flow.

Alternative policy pathways are needed to bring about systematic and structural changes to the prevailing model of urban development. Strategies, policies, tools and mechanisms must be identified to manage the urban development process in support of MyCiTi corridor investment.

The City is prioritising the preparation of a Transit Oriented Development strategy to identify suitable tools and mechanisms. Work undertaken by TCT and the City's Spatial Planning department suggests that TOD is best conceptualised in terms of scales of intervention from metropolitan level, district/local level, precinct level, site level.

The City has already taken steps toward achieving TOD by introducing mechanisms or incentives that support mixed and high density development along higher order public transport infrastructure. These include the identification and demarcation of Public Transport Zones (PT1 and PT2 Zones) to offset parking requirements and the development of comprehensive TOD land use assumptions and principles to inform the City's 2032 IPTN. However to fully realise the holistic benefits of TOD it is fundamental that TOD is institutionalised within decision making structures within the City of Cape Town and aligned to emerging development corridors.

The following strategies, policies, tools and mechanisms are considered likely to have a high potential impact in the medium-long term:

- Metropolitan growth management strategies (directing bulk infrastructure in line with corridor development objectives to create necessary capacity as part of an infrastructure led development approach);
- Procedural incentives (reduced processing time of development applications and reducing development risk in policy supported areas);
- Corridor and precinct level planning for anticipated land use change (i.e. through proactive rezoning undertaken by the City, and using the overlay zones provided in the Cape Town Zoning Scheme);
- Proactive public land development programmes in IPTN areas;
- Land use incentives (development rights bonuses i.e. incentive / intensity overlay zones provided in the Cape Town Zoning Scheme);
- Local level integrated transport and spatial planning frameworks to guide development control and coordinate investment programmes;
- Enhanced transit oriented development control based on development guidelines in public transport focus areas and an urban design focus for public transport precincts, and at a site level;
- Financial interventions (such as the Urban Development Zone (UDZ) incentives, investigating the feasibility of reducing development levies or property rates in IPTN supportive areas).

Land use changes should be informed by the requirements for improving public transport financial sustainability; improve the location, intensification and densification of land use; and encourage the emergence of optimally designed corridors.

It is important to contextualise the quantum of capital and operating investment in developing and operating public transport systems and the potential of the expanding high quality public transport networks to contribute towards a broader process of city restructuring. In order to realise the benefits of corridor development and ensure the viability of MyCiTi operational investments there needs to be a long term commitment to moving towards a compact city, and a comprehensive TOD scenario. Progressive TOD interventions should be introduced as high quality transit comes online to enhance the attraction of public transport.

A number of institutional reforms may be necessary to ensure greater coordination between land use planning, transport planning/operations, integrated human settlements and investment related decision making to achieve TOD outcomes.

Partnership approach with national government

While a partnership approach with national government does already exist, this needs to be significantly deepened. Transport for Cape Town needs to take responsibility for the risks that are under its control.

National government needs to:

- Clarify the long-term fiscal envelope within which the system is to be developed;
- Co-design standards such that they can be met within this envelope based on an affordable and appropriate contribution from the City's own revenue sources;
- Guarantee reliable and predictable revenue sources for ongoing subsidisation of the system at agreed levels; and
- Institute mechanisms to manage risk of unexpected events with adverse financial consequences where the impact of such risks is beyond the City's financial capacity to address it.

4.6. Moderation exercise

4.6.1. Background

The 'Making MyCiTi Financially Sustainable' study was concluded after long-term vehicle operator contracts were signed and was able to include knowledge of these costs into its findings, but before the 2013/14 rollout began to reveal that fare revenues were significantly lower than anticipated.

4.6.2. Process followed

An intensive four-month review and adjustment of current operational practices and service characteristics (referred to as a 'moderation' exercise) was undertaken around mid-2014 to analyse existing services, rationalise services and balance supply with passenger demand. This allowed for a thorough assessment of potential cost reductions and revenue

improvements to achieve financial sustainability. The process entailed detailed surveying and analysis of all routes, including testing and calibration exercises regarding the passenger numbers as reported by the fare system.

Key changes identified, covered in detail in Annexure B and Annexure C to this Update include:

- Optimising routes to increase bus capacity utilisation (load factors), including changing vehicle sizes where appropriate and where larger vehicles are available. Large 12m buses are high floor and not universally accessible in a feeder environment, it was resolved these would be interspersed by the use of 9m low-floor buses to provide the necessary accessibility. This process confirmed the value of trunk extensions which involves extending the 12m trunk bus beyond the trunk routes to supplement feeder buses and reduce feeder fleet requirements;
- Curtailing some routes and frequencies where demand is low, including removing some routes, increasing late night and weekend headways, and reducing late night services;
- Improving internal departmental protocols and addressing management structure issues to avoid deviations from agreed parameters;
- Smoothing the peak to off peak differential by increasing peak fares compared to off-peak fares, capping services in the peak and supplementing MyCiTi peak services on some routes by permitting taxis to operate only in the peak;
- Reducing recovery/cycle times by improved signalling and other infrastructure changes;
- Reducing staff at stations, by reducing kiosk hours linked to demand and improving station door technology or maintenance;
- Revenue protection measures;
- Investigating potential cost reductions resulting from improved bus: driver ratios;
- Improved law enforcement to reduce the number of illegal minibus-taxi operators, accompanied by carefully synchronised marketing campaigns and promotional MyCiTi incentives designed to 'capture' stranded or queuing passengers;
- Investigating the retention of minibus-taxi services in periods where the level of public transport demand and associated financial viability does not warrant a full MyCiTi service, where taxi operators with legal rights to operate have not been compensated; and
- Developing strategies for transit oriented development and shifts in urban form over the longer term to improve sustainable transport services.

4.6.3. Summary of optimisation of system through moderation – Phase 1

The MyCiTi system moderation exercise has identified significant cost savings which are in the process of being implemented, without substantially reducing service levels. Such an exercise is necessary after an initial period of implementation of any new services, during which the reality of the service should be assessed against the business plan, adjusted and then stabilised. The moderation exercise has provided significant insights into the key

drivers of costs. This will increasingly enable the City to identify the trade-offs between cost saving and service levels and quality.

In the Strategic Overview above a table has been provided illustrating the differences in kilometres provided per month for Phase 1 for different scenarios within the moderation process (see Table 1-1 on page 20).

In the 2012 MyCiTi Business Plan it was assumed that scheduled services for Phase 1 would involve services amounting to 1 229 402 kms per month. As it became evident that actual costs per kilometre would be higher than modelled the planned kilometres were reduced to 1 083 069 kms per month (as stated in the VOC contracts, and as quoted in the s33 report to Council) with 812 302 being contractually guaranteed to the vehicle operators, should the realised demand having been much lower than projected.

As can be seen from the table the total kilometres that would be operated in Phase 1 areas (used for illustrative purposes) if pre-moderation practices had continued, would have be 1 614 544 per month, which is significantly higher than any of these amounts. The kilometres were increased to this extent due to factors such as a higher demand than anticipated in the peak, longer cycle times than assumed, congestion and the absence of bus priority measures on some routes, and shorter headways in off-peak periods.

The figures provided under 'Moderated: Balanced' and 'Aggressive service reduction' in the table below show options TCT examined in its moderation process.

It was concluded that the 'Moderated: Balanced' scenario was the preferred scenario which was accordingly implemented. Limited further moderation may be possible without serious adverse impact on passenger experience, however, if aggressive service reduction measures (as shown in the last column above) wherever to be implemented, service levels could fall significantly and the integrity of the MyCiTi system could be severely compromised. This was therefore avoided. However, as the system is bedded down other approaches to containing the deficit may be followed, as discussed elsewhere in this Update.

The outcome of the moderation exercise guided the City in relation to a number of changes and modifications that needed to be made to better match the supply of services with passenger demand and to ensure the long-term sustainability of the MyCiTi service. The process entailed various operational efficiency improvements as well as vehicle rescheduling – in some cases increasing supply, but also curtailing services where demand was particularly low, and did not meet the original projections. The moderation had four implementation stages, the first two which have been affected already and the second, which will be done by the middle of 2015.

An example of headway changes and operational efficiency improvements as an outcome of the route-by-route analysis is provided on Figure 4-1 and Figure 4-3.

The financial impact of implementing moderation measures for the 14/15 financial year is estimated at a saving in the order of R30 million, with larger savings expected for the 15/16

financial year over R100 million, as further moderation measures are implemented. The projected savings from the route-by-route analysis are indicated on Figure 4-2.

Annexure B and Annexure C provides further detail on the moderation measures and projected cost savings resulting from the route-by-route analysis.

Operational Input Values		Weekday						
		05:30 - 06:00	06:00 - 09:00	09:00 - 13:00	13:00 - 15:30	15:30 - 19:00	19:00 - 20:00	20:00 - 21:30
Headway (min)	Existing	20	5	22	23	5	20	20
	Proposed 103		14	28	19	14	60	60
	Proposed 103a		16			34		
Combined headway			7			10		

Operational Input Values		Saturday				Sunday & PH			
		06:00 - 09:00	09:00 - 15:00	15:00 - 19:00	19:00 - 21:30	07:00 - 09:00	09:00 - 15:00	15:00 - 19:00	19:00 - 21:30
Headway (min)	Existing	30	30	30	30	30	30	30	30
	Proposed 103	60	30	30	60	60	60	60	60
	Proposed 103a								

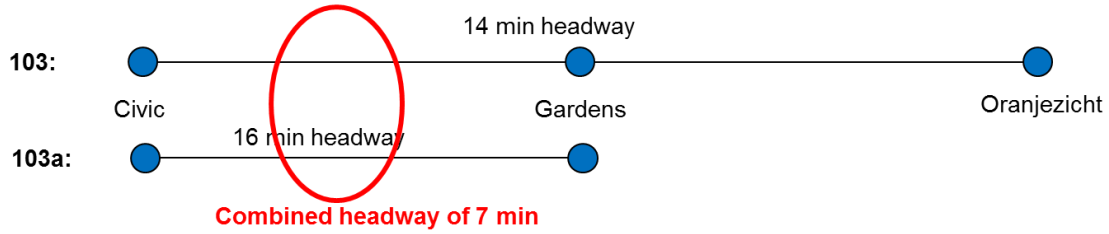


Figure 4-1 : Example of route-by-route analysis to optimise MyCiTi service

Moderation measures must continue to be pursued in parallel by the relevant streams to supplement projected savings. These include: measures to reduce cycle time including infrastructure improvements for faster bus movement, further signal improvements, improved fare controls i.e. appointment of inspection service, investigating the design of a night service, further route modifications to better align with demand (103, 104, 106/7, 108/9), further bus and driver optimisation, marketing off-peak travel, and vigorously pursuing TDM and TOD measures to realise benefits over the short, medium and long term.

ROUTE	SAVINGS
INNER CITY, SEA POINT & HOUTBAY ROUTES	
101	R 2 003 261 per annum
102	R 588 181 per annum
103	R1 609 745 per annum
104	R 839 688 per annum
105	R 1 582 525 per annum
106 & 107	R 984 212 per annum
108 & 109	R 10 473 778 per annum
113	R 2 096 236 per annum - route cancelled

ROUTE	SAVINGS
TABLE VIEW ROUTES	
213	R 866 120 per annum
214	R 522 185 per annum
215	R 497 926 per annum
216	R 633 191 per annum
217	R 796 077 per annum

ROUTE	SAVINGS
ATLANTIS ROUTES	
230	R 1 215 284 per annum
231	R 1 575 769 per annum
232	R 2 678 108 per annum
233	R 330 462 per annum
251	R 2 739 830 per annum
236	R 750 800 per annum
239	R 7 368 011 per annum Cancelled subject to commencement of Atlantis Trunk

ROUTE	SAVINGS
TRUNK ROUTES	
A01	R 2 748 740 per annum Airport Service
T01	R 537 731 per annum
T02	To Commence
T03	To Commence

Figure 4-2 : route-by-route analysis summary of savings

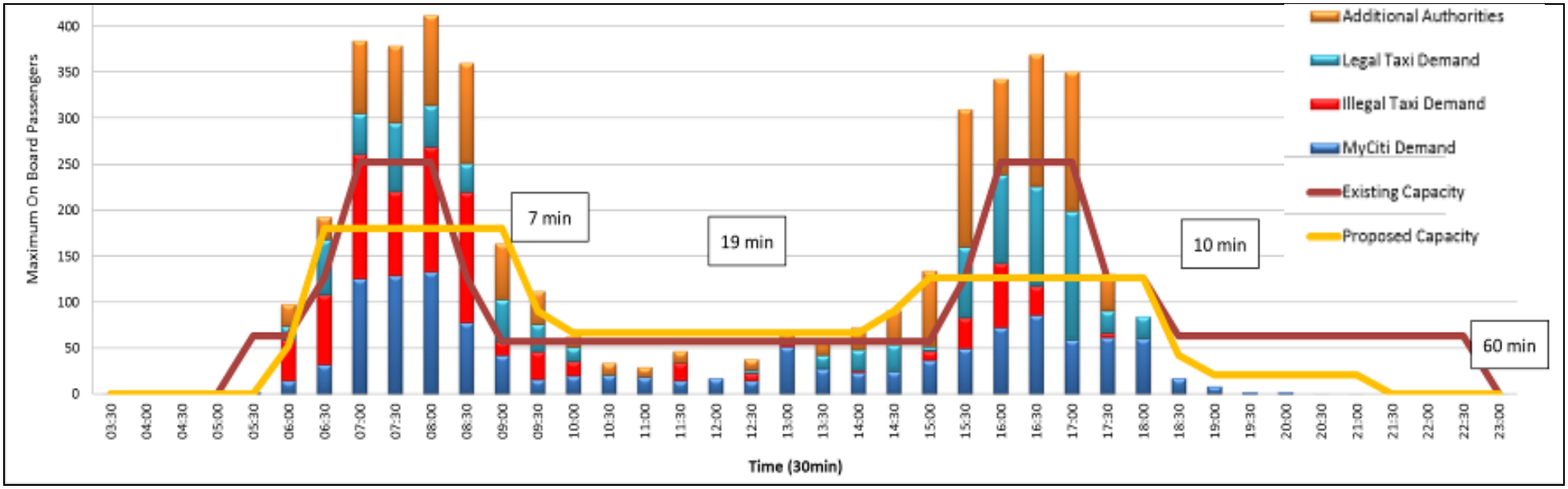


Figure 4-3: On-board passengers (demand) vs. bus capacity (supply)

5. System Plan

Chapter Summary

The System Plan introduces the Integrated Public Transport Network (IPTN) 2032 which was approved by Council in June 2014. This chapter also introduces key principles of the IPTN 2032 which sets the journey towards a more sustainable, integrated, intermodal and interoperable public transport network. It also discusses key system planning lessons learnt based on revealed information since the 2012 business plan and describes the moderation exercise which better aligned supply to reveal demand. This chapter details the result and impact of the moderation exercise on the system plan including route changes as well as surveys and data analysis. The chapter primarily provides the system plan detailing the route descriptions and sets out the revised rollout plans and planned launch dates for outstanding Phase 1 and N2 Express milestones.

Achievements

- All planned routes as per the previous business plan have been roll-out except for the remainder of the:
    - Atlantis trunk and feeder routes
    - full roll-out of the Du Noon trunk services to include the 18m busses
    - N2 Express service to Khayelitsha and Mitchell's Plan which involves the 2nd routes into these areas
    - Phase 1B trunk and feeder services
- Development of Integrated Public Transport Plan (IPTN) 2032 and approval by Council in June 2014
- Development of a Fare Policy and associated structure and design
- Refinement of Phase 1B to address lessons learnt during the moderation.

Challenges

- TCT to proactively drive Transit Oriented Development (TOD) and Travel Demand Management strategies which will enhance the financial sustainability of the proposed system plan.
- TCT to enhance its transport data to continuously calibrate the transport model and to stay abreast of travel patterns and trends.
- Continuously manage and monitor the impact of competing taxi industry on passenger demand.
- Continuously endeavour to improve bus cycle time through effective route design, infrastructure provision and/or traffic signal improvements in favour of public transport.

5.1. Integrated Public Transport Network (IPTN) 2032

The National Land Transport Act (2009) requires all planning authorities to plan, implement and manage modally integrated public transport networks (IPTNs). The NLTA defines an Integrated Public Transport Network (IPTN) as "a system in a particular area that integrates public transport services between modes, with through ticketing and other appropriate mechanisms to provide users of the system with the optimal solutions to be able to travel from their origins to destinations in a seamless manner".

IPTN planning determines the role of appropriate public transport modes to provide users of the system with optimal solutions to be able to travel from origin to destination in a seamless and in the cost effective manner.

The key deliverables of IPTN planning include:

- Defining the role of rail and road based modes;
- System route descriptions (rail and road-based);
- Station, stop and transfer station locations for both road and rail based modes;
- Preliminary projection of system revenue and system operating costs;
- Predicting passenger demand per route;
- Determining route service frequencies, fleet types and sizing by mode
- Implementation sequence of the network
- Business parameters and funding mechanisms

The IPTN planning process results in the development of the following four planning documents, namely the IPTN Network Plan, IPTN Operations Plan, IPTN Implementation Plan, and IPTN Business Plan. These documents together provide strategic guidance for public transport implementation in Cape Town into the future. The contents of each of these plans are indicated below and are produced sequentially, based on the IPTN Network Plan.

Table 5-1 IPTN package of plans

PLAN	PURPOSE	MAIN DELIVERABLES	STATUS
IPTN Network Plan	To provide a map of the 2032 Integrated Public Transport Network and explain how it was developed	Evaluation of alternative public transport networks for 2032 population and land use scenarios using a travel demand forecast model. Maps and descriptions of the public transport routes in the Integrated Public Transport Network for 2032.	Approved (Council, 25 June 2014)

IPTN Operations Plan	To determine the fleet and facilities required per corridor to operate the IPTN for the 2032 passenger forecasts	Operational parameters and service design including fleet type, fleet numbers, headways, operating speeds, express services, station types, hours of operation, size of stations and depots.	At the development of this document, this plan was submitted for March 2015 Council meeting
IPTN Implementation Plan	To determine a roll-out plan for the provision of facilities and procurement of vehicles for the IPTN	Implementation strategy, prioritisation of corridors, cost estimates, funding availability, design and construction time, vehicle procurement lead time	Under development
IPTN Business Plan	To determine the IPTN financial sustainability in greater detail, determine applicable business parameters and identify funding mechanisms	Financial assessment and business analysis, business structure for the IPTN, business parameters, industry transition and company formation aspects	Commencement imminent

The approved IPTN 2032 comprises a rail network and a road based trunk network, which make up the trunk network component of the IPTN. This trunk network is supported by a road based feeder network. This IPTN 2032 was approved by Council in June 2013 (see Annexure G for the Council resolution).

The IPTN 2032 confirmed and supports the Phase 1A, 1B and the N2 Express system plan and associated structural elements as described in the 2012 MyCiTi Business Plan, and in this Update.

5.2. Key System Planning lessons learnt since 2012 business plan

5.2.1. Significant difference between peak and off-peak usage

As for many developing cities, the revealed public transport usage shows a dominant tidal and peak period utilisation. For a short period of the day, the demand for travel is high while the rest of the day demand is relatively low. This results in a high fleet requirement which is only used for a short period of the day. It is international public transport planning norm to size your fleet on peak demand. Key lesson learnt since 2012 is that this (sizing the fleet for a short period of operation) is not sound financial practice. The more you supply to match the demand the bigger the financial strain.

Key interventions involve:

- Providing a cap on the supply during the peak periods as a travel demand management (TDM) measure to encourage people to travel on the shoulders;
- Introduce Peak and Off-peak Fares to encourage more off-peak usage; and

- Investigate whether existing taxi service can supplement the MyCiTi service during the peak periods to in sum respond to the total demand.

5.2.2. Route demand profiles

A typical daily profile shows high peak periods and relatively low off-peak periods. In addition to the variation across the time of the day, the usage also varies along the route from extremely busy sections to quiet segments for example the end of route 103 through the residential area. This results in the provision of a regular service with relatively low passenger usage during the off-peak and quiet segments of the route.

Key interventions involve:

- Introducing short turns along the route which prevents a bus traveling the entire route. Therefor along the route the supply can be tailored to match the demand in time of day and segment of route.
- Increase service headway to hourly services during very quiet times especially at night.

5.2.3. Competing taxi services

The original system planning assumption was that the existing public transport services competing with MyCiTi would be 100% removed and all captive public transport users would shift to MyCiTi. This did not materialise and in fact in areas attracted more taxis from areas as the self-enforcing mechanisms (being the taxi industry itself) were now removed. Interventions to resolve this matter is discussed in paragraph 10.1.6.

5.2.4. Fleet Capacity utilisation

In the 2012 Business Plan the system plan provided the following capacities for each vehicular type, namely:

- 18m articulated bus with a capacity of 124 passengers
- 12m solo bus with a capacity of 75 passengers; and
- 9m feeder bus with a capacity of 45 passengers.

On average the collected transport data indicates 90% capacity utilisation with the:

- 18m articulated on average carrying 110 passengers;
- 12m solo bus on average carrying 70 passengers; and the
- 9m bus on average carrying 42 passengers.

Contributing factors to this poor utilisation are:

- Frequent and reliable services during peak periods encourages passengers to wait for the next bus to get a seat;

- Passenger queueing system used within well used stations; and
- Poor utilisation of all standing space available as the passengers tend to congregate around the doors.

The N2 express service is showing (interestingly) different results as the capacity is over utilised during the peak periods. Possible reasons for this is the overwhelming demand coupled with the under provision in terms of supply. This under provision results in long headways and therefor passengers fully utilise the bus capacity as space is not guaranteed on the next bus. As discussed in the 2012 business plan, the purpose of the N2 Express service was to provide a top-up service to support existing rail and road based services. Since the roll-out of the N2 Express, passengers have shifted from other modes and therefore currently perform more than a top-up service which puts strain on the planned supply.

5.2.5. Variable journey time in mixed traffic conditions

In cases where feeder buses travel in mixed traffic, the cycle time varies from bus to bus. Cycle time is generally defined as the time between when a bus leaves position A, travels the entire journey and back and as is available to start the journey again at point A. Cycle time is key determinant of fleet size. The longer the cycle time the more buses are required to maintain the service timetable. This variability could not be actively managed or maintained due to the inability to effectively utilise the control centre contract.

In addition to the impact on fleet size, the variability in cycle time also influences bus holding space requirements at key transfer stations especially when busses arrive early and they need space to hold before their next departure.

5.2.6. Transport data

The transport demand model was based on historical and dated transport data which needed to be factored up to future years. This highlighted the need for regular updates of the City's transport data register to both calibrate the City's EMME transport model and to actively monitor transport movement patterns and trends. In addition there was no historical minibus-taxi (MBT) on-board data or passenger transfer information which resulted in assumptions on boarding and alighting MBT profile along the route. These shortcomings in the transport data have been factored in a recently advertised Transport data tender which should be awarded in the 2nd quarter of 2015.

Transport Input into the EMME transport model was based on household surveys. This survey has a sample of approximately 25 000 households which attempts to extract information with regards to household travel behaviour. This survey has an inherent challenge that trip end information is generally poor with respect to actual location details as answers are generally vague with respect destination details. This inherent weakness influences the accuracy of determining travel patterns. To overcome this, employment and destination end surveys are proposed for future surveys.

The transport demand model is a morning commuter peak hour model. This information is extrapolated across the day using well researched expansion factors. Revealed information showed that these factors overestimated the whole day demand.

5.2.7. System Revenue Projections

The revenue generated by the system comprises three components: the fare revenue from passenger fares, revenue from advertising on MyCiTi related infrastructure and on vehicles, and other revenue, such as through retail concessions in and around the stations, and private sector contributions towards services that benefit them (for example the Table Mountain service, which is of benefit to the Table Mountain Aerial Cableway Company).

Until the accelerated rollouts after November 2013, following the conclusion of the long term VOC contracts, the estimates of fare revenue were based on passenger and revenue modelling. The routes, frequencies, vehicle types, and fare structure and fare level were modelled and optimised to increase levels of patronage and maximise fare revenue, while providing a high standard of service to the passenger. The figures assumed that the automated fare collection system and APTMS would be in place.

When national government initially embarked upon the BRT programme it incorrectly assumed that the improvements in efficiencies would fully obviate the need for significant vehicle operator subsidies. However, already, in the 2010 and 2012 Business plans, modelling done in the context of national assumptions showed that this won't be the case, probably until the very transport-inefficient urban form of the City is changes. As the system expanded it became more evident that actual fare revenue was below the modelled amounts as contained in the 2012 Business Plan. The reasons for this over-estimation have been analysed.

They are attributable to three key sets of input assumptions, summarised below:

Transport data assumptions

- The model was based on historical transport data which needed to be factored up to future years. This highlights the need for regular updates of the City's transport data register to calibrate the City's EMME transport model;
- There was no historical minibus-taxi (MBT) on-board data or passenger transfer information which resulted in assumptions on boarding and alighting MBT profile along the route;
- Transport input into the EMME transport model was based on household surveys. There were no trip end surveys; and workplace location information which influences the accuracy of determining travel patterns was not adequate;
- The transport demand model is a morning commuter peak hour model. This information is extrapolated across the day using well researched expansion factors. Revealed information showed that these factors over-estimated the whole day revealed demand.

These shortcomings have been factored in a recently advertised Transport data tender which should be awarded in the 2nd quarter of 2015.

Demand projection assumptions

- Modelled peak hour bus capacity utilisation assumptions for the Phase 1 corridor were higher than the actual - there has been reluctance by Phase 1 passengers to fill buses to capacity. They would rather wait for the next bus. This resulted in lower revenue per bus trip operated than was projected;
- Off-peak demand assumptions on average were somewhat high compared to actual peak to off-peak ratios. The City's EMME model is a morning peak hour model, to which a factor (6.7) was applied to generate the whole day profile. The actual revealed data showed a lower factor (5.75), which impacts the whole day demand quantum;
- It was assumed that practically all existing services would be replaced by MyCiTi and thus all modelled passengers were assigned to MyCiTi. Existing conditions show that many minibus-taxis are still operating (some legally so, having moved their services from other areas to the inner city, since it turned out that their licence conditions permitted this) and many passengers are still being transported in parallel to MyCiTi services; similarly some GABS routes are still operating, and have not been discontinued;
- The City's EMME model is sensitive to a punctual and reliable service and assigns demand if the service can be relied on to be on time with short waiting times. Due to the challenges of the Control Centre Contract the reliability standards as modelled could not be achieved;
- After the 2012 Business Plan a vehicle optimisation process was followed to reduce vehicle kilometres. It was assumed that a similar passenger demand would still be accommodated and therefore revenue not impacted. The reality may be different.

Revenue collection assumptions

- Original projections assumed minimal loss of income assumptions but revealed data shows on average a 8% loss of income due to faulty validators and other AFC challenges, including fare evasion. Surveys indicate that fare evasion is running at approximately 2%. The losses due to technical issues with the fare system have been reduced, but the full impact of such improvements on fare income must still be established.

5.3. Moderation exercise

The MyCiTi moderation exercise confirmed and quantified the lessons learnt as discussed in para 5.2 above. As already described in para 4.6 earlier, the moderation process resulted in various route changes. In order to propose the most impactful changes a proper understanding of the current system operations was required. To develop this understanding a significant amount of data was collected and analysed via manual surveys or via the AFC and LIO systems. The data was sorted and cleaned before being interrogated to inform the decisions taken as part of the moderation exercise.

A number of mechanisms were employed to achieve the moderation of services as indicated in Chapter 4 and discussed below.

Moderating the peak supply

This introduces the concept of peak lopping. Recent MyCiTi utilisation surveys have revealed that passenger demand is extremely concentrated in a short peak, while the demand during the rest of the day (inter-peak and off-peak) is low. This demand profile drives costs up as a large fleet is required to serve the very peaked demand over a short time period and those buses are then not earning revenue for the rest of the day. Peak lopping is a concept that proposes that the full peak demand is not catered for and that the supply is capped and a spreading of the peak is encouraged. The spreading of the peak needs to be encouraged by fare savings in the shoulders of the peak and in the inter-peak and off-peak. In addition to fare incentives to drive peak spreading, changes in spatial planning (more TOD type development) and introducing travel demand measures (TDM) will be more effective tools in changing travel patterns.

Hybrid model

Previously the MyCiTi system was planned to replace all existing road-based public transport. Due to the high costs of providing a high quality public transport system, the need for a hybrid system arose, whereby the formal, scheduled service will not always supply the full demand during the peak but supply may be supplemented by the informal sector. This concept and how it will be implemented requires further investigation and planning (see paragraph 10.1.6 for further detail.).

Operational changes

Proposed operational changes included increasing headways especially on weekends. Through the moderation exercise it was proposed that most routes operate at 60 minute headways on weekends. Certain routes were shortened to remove links that were not being well utilised. The shortening of routes resulted in a shortening of cycle times and therefore a decrease in fleet requirement.

5.4. MyCiTi Phase 1 & N2 Express System Structural Elements

The Phase 1 and N2 Express system structural elements have remained largely the same as described in the 2012 business plan. Key refinements are listed as follows:

5.4.1. Serving low and irregular demand

2012 business plan identified the 6m and 9m scheduled services as the only mechanisms to fulfil the feeder services. During the moderation process, the cost of running a scheduled 6m services emerged as relatively expensive to run in response to low and irregular demand. This initiated the hybrid model which attempts to utilise existing minibus-taxis to both operate in areas not served by the scheduled services subject to it being viable for the industry. This is further discussed in para 10.1.6.

5.4.2. Priority measures for feeder services

To ensure more improved cycle time and more consistency, priority measures for feeders are now a key component of the system structure. The target average operational speed for feeder services is 15km/hr. These priority measures will take the form of dedicated lanes either along segments where there is congestion, and queue jump lanes at intersection which allows the bus to bypass the queue to the stop line. This is discussed in detail in Chapter 6 of this document.

5.4.3. Serving high feeder boarding and alighting numbers

Since the 2012 business plan the following were observed regarding the feeder services:

- As the boarding and alighting numbers increase at feeder stops, the longer the bus dwell time at that stop which eventually impacts the route cycle time. As discussed before the cycle time has significant impact on fleet size. This bus dwell time can be reduced by having a station which allows the ticket validation to be moved from the bus to the station.
- A station as described in the previous business plan involved fully closed and staffed stations all day. TCT infrastructure department is investigating feeder stations that allows validation off the bus during the peak periods and on-board validation during the off-peak periods.

5.4.4. Fleet (low entry vehicles)

Based on lessons learned from Phase 1 the flexibility of low type floor trunk buses with doors on both sides of the vehicle should be considered as an important option within the mix of vehicles. The family of low type floor busses comprise of: (1) low floor which is completely low floor for the effective length of the bus and; (2) Low-entry which is only low floor along the length of the bus where passengers enter or exit. These vehicles can stop at a closed median station where passenger demand volumes require this or at a kerbside open station (with on-board fare validation) if passenger demand is low, requiring less

station infrastructure and reduced operating costs. Low-type floor trunk buses can also be used at feeder stops as trunk extensions to reduce passenger transfers, and can stop at low-type floor trunk stations avoiding the need for separate stations where low-type floor feeders and high-floor trunks interface, as in Phase 1.

In general, greater seating provision is possible on high-floor vehicles making these vehicles better suited to long-distance trips while low-type floor vehicles are better suited to urban environments with predominantly shorter passenger trips. Ideally each route would have the appropriate vehicle type but the efficiencies gained by this are insignificant in comparison to those gained by the interoperability of vehicles between routes offered by a more standardised fleet which also enables standardised infrastructure, though this requires further analysis.

The bus vehicle floor height proposed for the 2032 IPTN's trunk and feeder vehicles are low-type floor buses and the 2032 IPTN specifically recommends low entry buses.

The term 'low entry' is specifically used to indicate that boarding/alighting from the vehicle is at kerb height, but allows for the design possibility that a portion of the interior floor of the bus may be raised (with a step up) to achieve additional seating over the engine, wheel arches and fuel tank, compared to an entirely low-floor bus. The Low-entry bus therefore optimises bus capacity and system flexibility.

Existing challenges on the N2 Express service (low floor buses) are around bus capacity and more specifically seating capacity. The low-entry vehicles provide the option to increase the seating capacity within the higher portion of the low entry vehicle. It is recommended that over time low-entry vehicles as opposed to the existing low-floor vehicles be used for services like the N2 Express. The low-floor vehicles should operate along corridors where there is frequent boarding and alighting.

A more detailed report which evaluates the suitability of different vehicle types will be included in the 2032 IPTN operational plan and business plan scheduled for completion later in 2015. This report will be used to determine the most suitable vehicle type going forward.

5.4.5. Fare Policy and design refinements

The first version of the City of Cape Town Fares Policy for Contracted Road-Based Public Transport was approved by Council on 29 May 2013. As a budget related policy the Fares Policy is required to be updated annually. The annual update to the Fares Policy for the 2014/15 financial year was approved by Council in May 2014 and the latest updated version of the Fares Policy for the 2015/16 financial year is currently in the approval cycle.

The Fares Policy is an overarching framework document or guiding document that must be referred to in all fare-related decision-making. In addition, all such decisions should also be made in accordance with the National, Provincial and the Local Government enabling legislation (i.e., NLTA, MFMA, MSA etc.) and policy frameworks for public transport. The key element of the Fares Policy which informs the establishment of the associated tariffs each year is the Fare Design. The Fare Design consists of the following 4 main elements:

- Fare strategy;
- Fare technology;
- Fare levels;
- Design exceptions.

The fare strategy is described in terms of four basic elements: the fare structure, discount and bonus strategies, the transfer pricing and policy and other supplementary services and is set out in the policy.

The update to the Fares Policy for the 2015/16 financial year entailed minor editorial amendments and updated references to external documents, policies, and laws as well as an amendment to the Fare Change Process chapter of the policy. The Fare Change Process chapter of the Fares Policy for the 2015/16 financial year was amended to provide the opportunity for the City to adjust the fares upwards of the projected annual Vehicle Operating Company (VOC) contract escalation for the purpose of system sustainability.

5.4.6. Phase 1A

Phase 1A was extensively covered in the previous business plan. Phase 1A includes the Inner City (including extension to Hout Bay), Woodstock rail station, Paarden Eiland, Milnerton, Montague Gardens, Century City, Dunoon, Table View, Melkbos, Atlantis and Mamre. It includes the rapidly growing residential areas in Table View north of the Diep River, and the low-income communities of Atlantis, Mamre, Dunoon and Doornbach. This corridor faces some of the worst peak period congestion levels, especially to the south and east of the bridges over the Diep River.

Figures Figure 5-1, Figure 5-2 and Figure 5-3 show the system maps of the inner city area, the Table View and Century City area and the Atlantis area respectively.

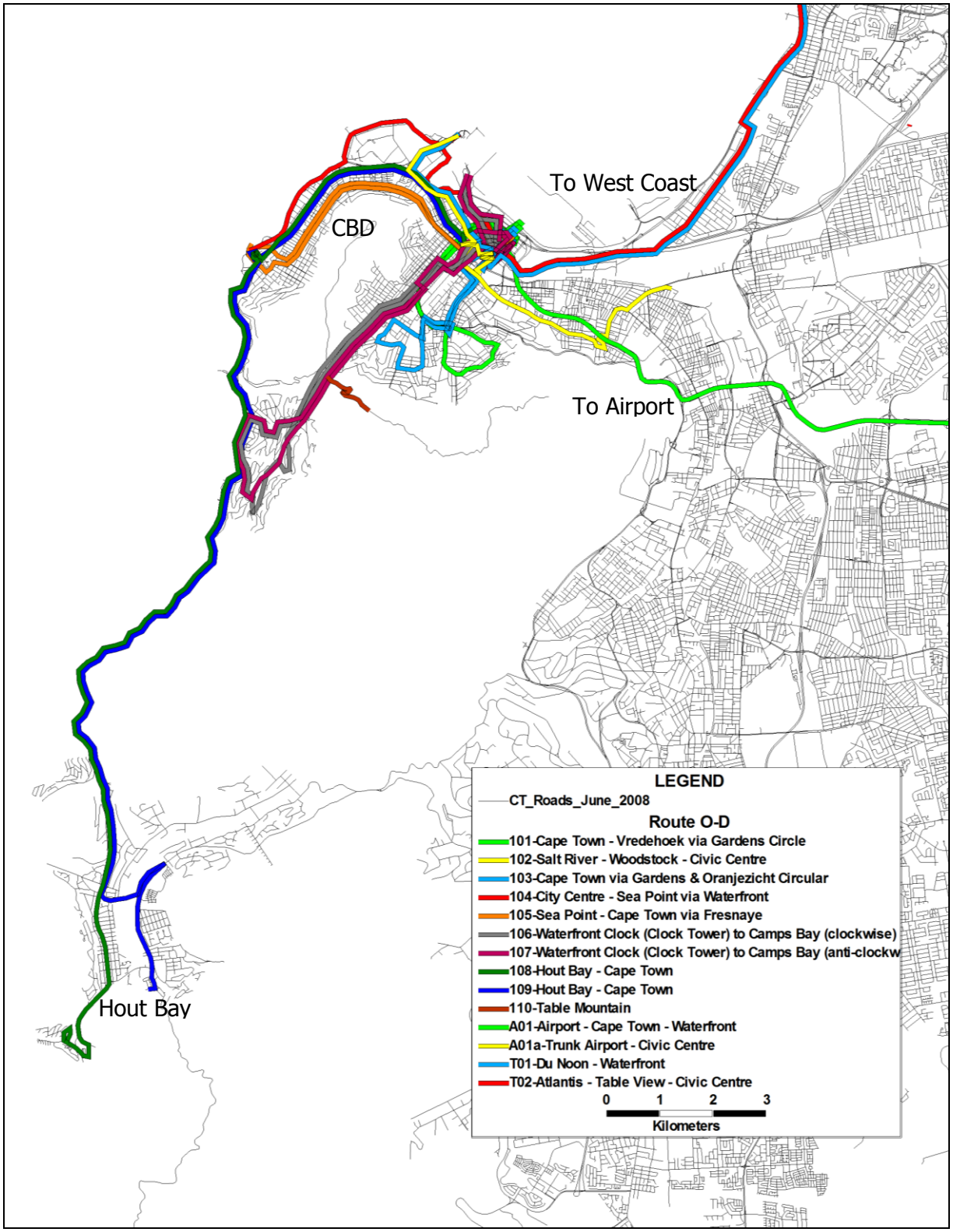


Figure 5-1: Phase 1A IRT System – Inner City and Hout Bay

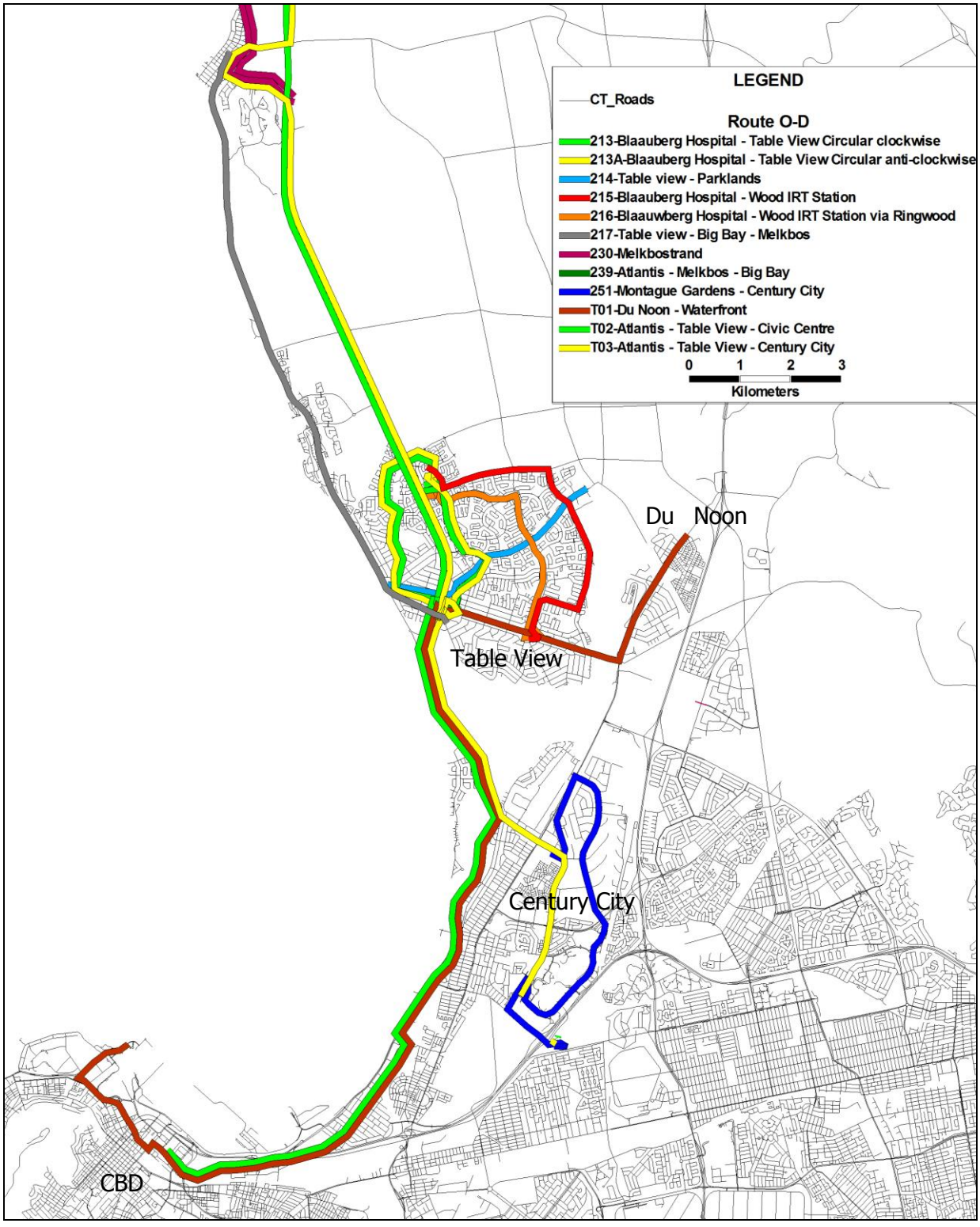


Figure 5-2: Phase 1A IRT System – Table View and Century City

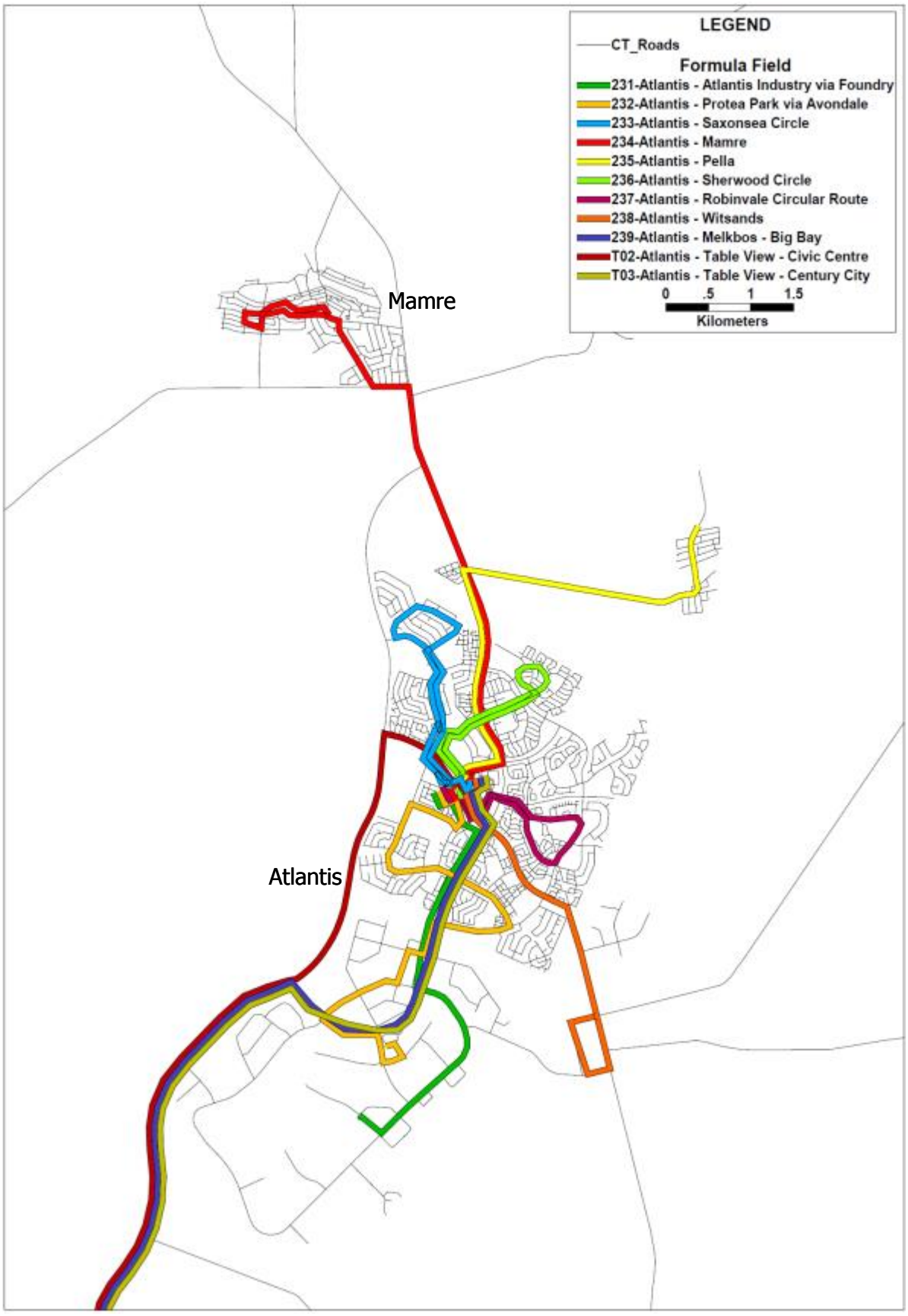


Figure 5-3: Phase 1A IRT System – Atlantis

Most of the Phase 1A routes have been implemented and are currently operational. The remaining routes for Phase 1A are planned to be operational by 2015.

Route descriptions

The descriptions for Phase 1A routes are summarised in

Table 5-2 below. The detailed route descriptions are given in Annexure D.

Table 5-2: Descriptions of Phase 1A routes

Service type	Route number	Route name
Trunks	A01	Airport - Civic Centre
	T01	Dunoon - Table View - Civic Centre - Waterfront
	T02	Atlantis - Table View - Civic Centre
	T03	Atlantis - Table View - Century City
Trunk Extensions	As per agreement in VOC Contract	
9m Feeders	101	Vredehoek - Gardens - Civic Centre
	102	Salt River Rail Station- Walmer Estate - Civic Centre
	102a*	Salt River - Walmer Estate - Civic Centre
	102b*	CPUT - Civic Centre
	103	Oranjezicht- Gardens - Civic Centre
	104	Sea Point - Waterfront - Civic Centre
	105	Sea Point- Fresnaye- Civic Centre
	106	Civic Centre - Camps Bay (clockwise)
	107	Civic Centre - Camps Bay (anticlockwise)
	108	Hangberg - Sea Point - Civic Centre
	108a*	Sea Point - Civic Centre
	108b*	Bakoven - Sea Point - Civic Centre

Service type	Route number	Route name
	108c**	Sea Point - Civic Centre
	109	Hout Bay - Imizamo Yethu - Sea Point - Civic Centre
	109a*	Imizamo Yethu - Sea Point - Civic Centre
	110	Table Mountain - Kloof Nek
	213	West Beach - Table View - Sunningdale
	214	Parklands - Table View -Marine Circle
	215	Sunningdale - Gie Road - Wood
	216	Sunningdale - Wood Drive - Wood
	217	Table View - Big Bay - Melkbosstrand
	230	Duynefontein - Melkbosstrand
	231	Atlantis -Atlantis Industria East
	232	Atlantis - Avondale - Protea Park - Atlantis Industria West
	233	Atlantis- Saxonsea
	234	Atlantis – Mamre
	235	Atlantis – Pella
	236	Atlantis – Sherwood
	237	Atlantis – Robinvale
	238	Atlantis – Witsands
	239	Atlantis - Duynefontein – Melkbosstrand. It is proposed that this route is cancelled, when the T02/3 is fully operational, as part of the moderation exercise, subject to assessing demand/supply.
	251	Montague Gardens - Century City Rail Station
Hybrid Model (subject to further investigation)	114	Area around the following axes covering Bo Kaap - CBD - Lower District Six - University Estate
	116	Area around the following axes covering Gardens - Upper Vredehoek - Highlands Estate - Gardens

Service type	Route number	Route name
	252	Du Noon area

**Route is currently being operated as 108a (rather than 108c) and runs from Civic Centre to Queens Beach.

An overview of the proposed role of minibus-taxis as part of the hybrid model is described in Chapter 4 and Chapter 10. This model was introduced as a result of the efficient and cost effective nature of minibus-taxi operations. However their informal characteristics make them unsafe and unpredictable. Therefore in Phase 1A the need for a scheduled MyCiTi feeder service using a smaller vehicle (6m) was planned to serve areas where topography or road geometry is restrictive. In terms of the hybrid model this 6m vehicle could be categorised under category 1: MyCiTi only, which means the relevant routes would be served entirely by MyCiTi. Therefore the planned 6m routes for Phase 1 still require further investigation before they can be considered viable.

Modelled operating characteristics

Phase 1A initial modelled operating characteristics per route are as shown in Table 5-3.

Table 5-3: Phase 1A initial modelled operating characteristics

General characteristics						Fleet characteristics based on predicted demand						AM peak hour boardings
Service type	**Route No**	**Route Name**	**Cycle Time* (min)**	**Vehicle size**	**Vehicle capacity**	**Predicted max load**	**Frequency (peak hour)***	**Fleet***	**Fleet required with 10% spare**	**Carrying Capacity (peak hour)***	**V/C ratio***	**Predicted boardings AFC trend analysis**
Trunks	A01	Airport – Civic Centre - Waterfront	57	12m	36	26	1	1	1	36	0.72	39
	T01	Dunoon - Table View - Civic Centre - Waterfront	150	18m	96	1163	13	33	36	1248	0.93	1744
	T02	Atlantis - Table View - Civic Centre	168	12m	65	401	7	20	22	455	0.88	601
	T03	Atlantis - Table View - Century City	132	12m	65	521	9	20	22	585	0.89	782
Trunk Extensions	Operating characteristics to be finalised with the VOCs											
Feeders	101	Vredehoek - Gardens - Civic Centre	34	8.8m	45	175	4	3	3	180	0.97	262
	102	Salt River – Walmer Estate - Civic Centre	41	8.8m	45	241	6	5	6	270	0.89	361
	103	Oranjezicht - Gardens - Civic Centre	30	8.8m	45	167	4	2	2	180	0.93	251

General characteristics						Fleet characteristics based on predicted demand						AM peak hour boardings
Service type	**Route No**	**Route Name**	**Cycle Time* (min)**	**Vehicle size**	**Vehicle capacity**	**Predicted max load**	**Frequency (peak hour)***	**Fleet***	**Fleet required with 10% spare**	**Carrying Capacity (peak hour)***	**V/C ratio***	**Predicted boardings AFC trend analysis**
	104	Sea Point - Waterfront - Civic Centre	53	8.8m	45	84	2	2	2	90	0.93	126
	105	Sea Point - Fresnaye - Civic Centre	41	8.8m	45	186	5	4	4	225	0.83	279
	106	Waterfront Silo - Civic Centre - Camps Bay (clockwise)	61	8.8m	45	215	5	6	7	225	0.96	323
	107	Waterfront Silo - Civic Centre - Camps Bay (anti-clockwise)	56	8.8m	45	217	5	5	6	225	0.97	326
	108	Hout Bay Beach - Hangberg - Sea Point - Civic Centre	148	8.8m	45	441	10	25	28	450	0.98	661
	109	Hout Bay Beach - Imizamo Yethu - Sea Point - Civic Centre	140	8.8m	45	346	8	19	21	360	0.96	519
	110	Table Mountain – Kloof Street		8.8m	45	41	1	0	0	45	0.92	62
	213	West Beach - Table View - Sunningdale	58	8.8m	45	104	3	3	3	135	0.77	156

General characteristics						Fleet characteristics based on predicted demand						AM peak hour boardings
Service type	**Route No**	**Route Name**	**Cycle Time* (min)**	**Vehicle size**	**Vehicle capacity**	**Predicted max load**	**Frequency (peak hour)***	**Fleet***	**Fleet required with 10% spare**	**Carrying Capacity (peak hour)***	**V/C ratio***	**Predicted boardings AFC trend analysis**
	214	Parklands- Table View - Big Bay	60	8.8m	45	307	7	7	8	315	0.98	461
	215	Sunningdale - Gie Road - Wood	44	8.8m	45	216	5	4	4	225	0.96	324
	216	Sunningdale - Wood Drive – Wood	33	8.8m	45	173	4	3	3	180	0.96	259
	217	Parklands- Table View - Big Bay – Melkbosstrand	96	8.8m	45	84	2	4	4	90	0.93	126
	230	Duynefontein - Melkbosstrand	45	8.8m	45	70	2	2	2	90	0.78	105
	231	Atlantis – Atlantis Industria East	47	8.8m	45	122	3	3	3	135	0.90	183
	232	Atlantis - Avondale - Protea Park – Atlantis Industria West	24	8.8m	45	175	4	2	2	180	0.97	262
	233	Atlantis – Saxonsea	18	8.8m	45	175	4	2	2	180	0.97	263
	234	Atlantis - Mamre	43	8.8m	45	90	2	2	2	90	1.00	135

General characteristics						Fleet characteristics based on predicted demand						AM peak hour boardings
Service type	**Route No**	**Route Name**	**Cycle Time* (min)**	**Vehicle size**	**Vehicle capacity**	**Predicted max load**	**Frequency (peak hour)***	**Fleet***	**Fleet required with 10% spare**	**Carrying Capacity (peak hour)***	**V/C ratio***	**Predicted boardings AFC trend analysis**
	235	Atlantis - Pella	37	8.8m	45	25	1	1	1	45	0.56	38
	236	Atlantis - Sherwood	16	8.8m	45	193	5	2	2	225	0.86	290
	237	Atlantis - Robinvale	18	8.8m	45	48	2	1	1	90	0.53	72
	238	Atlantis - Witsands	32	8.8m	45	114	3	2	2	135	0.84	171
	239	Atlantis - Duynefontein - Melkbosstrand	146	8.8m	45	220	5	13	14	225	0.98	330
	251	Montague Gardens - Century City	58	8.8m	45	249	6	6	7	270	0.92	374
Hybrid model / 6m feeders	Due to the nature of the model, these smaller areas could not be accurately modelled. In this regard a hybrid model is under investigation.											

5.4.7. Phase 1B

Phase 1B covers the remaining Phase 1 area and includes the areas of Montague Gardens, Century City, Summer Greens, Edgemead, Bothasig, Richwood, Maitland and Salt River. Phase 1B comprises the routes in Figure 5-4 below.

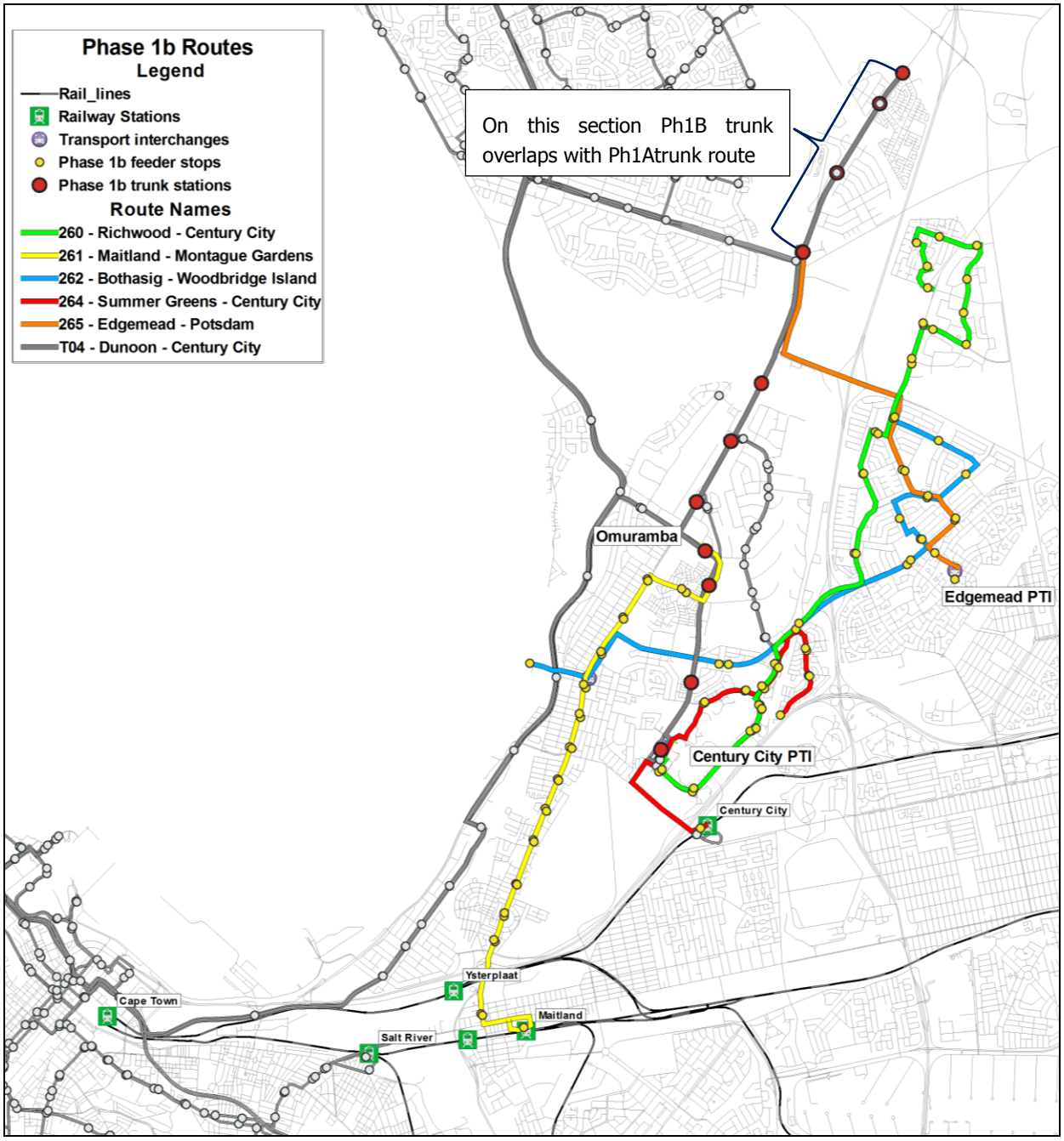


Figure 5-4: Phase 1B route network (under review)

Route descriptions

The route descriptions proposed for Phase 1B are summarised in Table 5-4 below. The detailed route descriptions are given in Annexure C.

Table 5-4: Phase 1B Route Descriptions

Service type	Route number	Route name
Trunk	T04	Dunoon (possible extension to R27 via Sandown Road) - Montague Gardens - Century City
Feeders	260	Richwood - Century City
	261	Maitland - Montague Gardens
	262	Bothasig - Woodbridge Island
	263	Edgemead - Century City
	264	Summer Greens - Century City
	265	Edgemead - Potsdam

Feeder route currently under review

Modelled operating characteristics

Phase 1B modelled operating characteristics per route are as shown in below Table 5-5.

Table 5-5: Operating characteristics - Phase 1b

Service type	Route No.	Route name	Vehicle size	Cycle Time (min)	Vehicle capacity	Passenger Volume (peak hour)	Frequency (peak hour)	Headway	Fleet	Fleet required with 10% spare	Carrying capacity (peak hour)	V/C ratio
Trunk	T04	Dunoon - Montague Gardens - Century City	12m	58	69	583	9	7	9	10	684	0.85
Feeders	260	Century City PTI - Richwood	9m	139	42	114	3	20	7	8	138	0.83
	261	Maitland - Montague Gardens	12m	87	69	582	9	7	14	16	684	0.85
	262	Bothasig - Woodbridge Island	9m	114	42	437	12	5	21	24	506	0.86
	264	Summer Greens - Century City	9m	78	42	56	2	30	3	4	92	0.61
	265	Edgemead-Potsdam	9m	80	42	70	2	30	3	4	92	0.76

**Feeder routes currently under review*

Rollout plan

The majority of Phase 1A is currently operational. Table 5-5: Operating characteristics - Phase 1b shows the revised milestone completion dates for the remaining Phase 1A routes and Phase 1B.

Table 5-6 : Revised milestone completion dates for remaining Phase 1A and 1B

Phase 1A			
Milestone	**Planned date**	**Sub-milestone**	**Revised date**
Milestone 3	February 2013	*Milestone 3.3*: Atlantis Service – Trunk T02& T03 *Milestone 3.4*: Atlantis Service –Feeders 234 / 235 / 237 / 238	April 2015 July 2015
Milestone 4	November 2013	*Milestone 4*: Du Noon Service – Balance with 18m buses	April 2015
Phase 1B			
Milestone	**Planned Date**	**sub-Milestone**	**Revised Date**
Milestone 5	October 2014	*Milestone 5.1*: Dunoon, Montague Gardens & Century City Trunk (T04)	August 2015
		Milestone 5.2: Phase 1B Feeders (subject to completion of the feeder priority measures)	End 2015 / early 2016

5.4.8. N2 Express Service

The N2 Express service started operations in July 2014 with the two eastern routes (Khayelitsha East -CBD and Mitchells Plain East - CBD). The remaining two western routes (Khayelitsha West - CBD and Kapteinsklip - CBD) are proposed to start operations by first quarter of 2015. Figure: 5-5 indicates the proposed routes and stop locations.

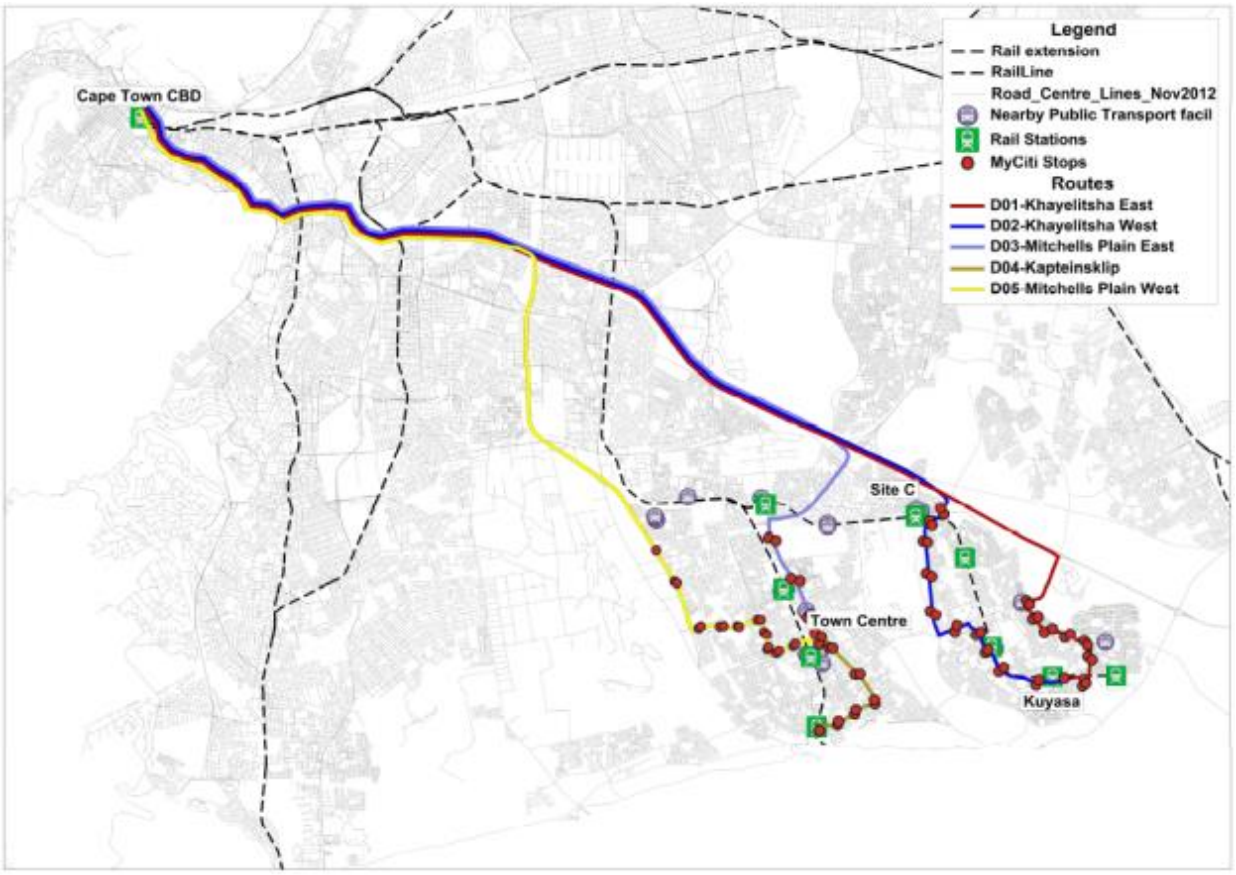


Figure: 5-5: N2 express routes (existing and proposed)

Route descriptions

The proposed route descriptions for the N2 Express service are summarised in Table 5-7 below. The detailed route descriptions are given in Annexure D.

Route D02 and D04 are currently under review following discussions with the transport industry.

Table 5-7: N2 Express service route descriptions

Service type	Route number	Route name	Anticipated Service Launch
Direct services	D01	Khayelitsha East - Cape Town (Civic Centre)	Operational
	D02	Khayelitsha West - Cape Town (Civic Centre)	April 2015
	D03	Mitchells Plain East - Cape Town (Civic Centre)	Operational
	D04	Kapteinsklip - Cape Town (Civic Centre)	April 2015

Operating characteristics

The N2 Express Service planned operating characteristics per route are as shown in Table 5-8 below.

Table 5-8: N2 Express service operating characteristics

Service type	Route No	Route name	Vehicle size	Cycle Time (min)	Vehicle capacity	Headway (min)	Frequency (peak hour)	Fleet	Fleet available with 10% spare	Off-peak frequency (per hour)	Carrying capacity (peak hour)
Direct services	D01	Khayelitsha East - Cape Town (Civic Centre)	18m	94	96	12	5	4	5	2	428
			12m		75			4	5		
	D02	Khayelitsha West - Cape Town (Civic Centre)	18m	96	96	12	5	4	5	2	428
			12m		75			4	5		
	D03	Mitchells Plain East - Cape Town (Civic Centre)	18m	88	96	10	6	4	5	2	513
			12m		75			4	5		
	D04	Kapteinsklip - Cape Town (Civic Centre)	18m	94	96	12	5	4	5	2	428
			12m		75			4	5		
								TOTAL FLEET	**40**		

Routes are currently under review to ensure that these services are aligned to actual passenger demand and aligned to vehicle availability.

5.5. Level of service standards and guidelines

Road-based scheduled public transport standards are guided by a range of criteria that describe acceptable operating conditions across the network. Primary criteria are assessed using the Transit Level of Service (LOS) methodology described in the US Transportation Research Board's 2010 Highway Capacity Manual.

Transit LOS incorporates factors for all aspects of a transit trip up to the point that a passenger boards a transit vehicle at a stop on an urban street. Satisfaction levels for walking to the stop are measured by the quality of the pedestrian environment along the street. Satisfaction levels experienced while waiting for a transit service are measured by service frequency, schedule reliability, and the kinds of amenities provided at the transit stop. On-board satisfaction is measured by the level of crowding on the transit vehicle as it departs the stop and the speed of the service.

As such, the letter grade calculated for any segment of the route is a reflection of the user's perception of the quality of the service provided, and is therefore, by necessity, a composite index. Higher quality services are more likely to attract and retain passengers, and lower quality services are more likely to lose passengers to competing modes.

Ultimately, level of service reflects how well a transit service meets the needs of its customers, which has ridership implications. However, a balance must be struck between the quality of service that passengers ideally would like and the quality of service that is affordable. This underpins the need for setting service standards that trigger decisions for whether interventions may be needed to address service performance concerns.

For the purposes of this a trip is defined as including the pedestrian infrastructure in the vicinity of the stop, including crossing facilities and conditions at the stop, the facilities and conditions at the stop itself and the conditions aboard the vehicle up to the destination.

To allow for comparisons with other travel modes, a common unit of a street segment is used. The segment is defined as the length of street between intersections where traffic on the street may have to stop due to traffic control, plus the intersection at the downstream end of the segment.

5.5.1. Primary Criteria

The transit LOS for the MyCiTi system should be targeted at LOS D under normal operating conditions.

The system should be monitored to assess the level of service periodically, and on the basis of recurrent issues and problems along particular route segments. Possible interventions should be considered if a minimum average of LOS E is not maintained along a route over the course of a work week, or LOS F is regularly encountered on any one segment of a route during the peak and inter-peak periods.

The evaluation and analysis of the problem will be the responsibility of the TCT Planning directorate. The development of an appropriate response to the problem will be the responsibility of the TCT Infrastructure or Contract Operations directorates.

Cognisance must be taken of the effects of construction activities, accidents or other incidents of a temporary nature when evaluating a route's performance.

5.5.2. Target Criteria

In addition to achieving the standards described, the following service level targets are set for each route:

Table 5-9 Level of Service (LOS) guidelines

Criteria	Target	Key determining factor
Headway		
Maximum	60 minutes.	Customer perception of a quality public transport system.
Peak passenger capacity		
100% of the average demand for the daily peak 30 minutes shall be supplied along any route.		
Average operating speed		
Trunk	Average route operating speed more than or equal to 30 km/h.	Speeds determined to be competitive with private vehicles.
Feeder	Average route operating speed more than or equal to 15 km/h.	Speeds determined to be competitive with private vehicles.
Timetable adherence		
Trunks	85% on time departures.	On time is defined as being within five minutes after and two minutes before the scheduled departure time.
Feeders	75% on time departures.	
Pedestrian environment		
Minimum LOS	D	Calculated using HCM 2010 Pedestrian Level of Service method.

5.5.3. Criteria for service operational amendments

The following specific actions should be considered when the criteria triggers are met:

Criteria	Trigger
5.1 Increase headway	Revealed demand is less than 35% of the capacity over the course of a month and where there will be no negative impact on the existing revenue/cost ratio.
5.2 Cancellation of services	Where the supply required for the demand exceeds a headway of 60 min after applying criteria 5.1.

Any service changes not specifically dealt with by these warrants, such as station closures and route amendments, should be considered on an ad-hoc basis and informed by a detailed assessment of the factors involved.

Primary to these investigations should be the effect that the proposed change has on the service levels offered to passengers and the cost implications of the proposed changes.

5.5.4. Protocol for operational amendments to services

Any proposed amendment to services must be demonstrated to be required when the standards and guidelines set out here are applied to that service. Interventions proposed are subject to agreement by the Directors of the Planning and Contract Operations departments.

6. Infrastructure, related design and cost issues

Chapter Summary

This update includes issues dealt with in the 2012 Business Plan where there have been changes, as well as new issues.

Achievements

- All planning and construction of Phase 1A is now completed; N2 Express and Phase 1B construction are still underway.
- The first construction tender for Phase 1B has been advertised.
- N2 Express, focused primarily on supplementing capacity of rail until planned rail upgrades, uses the public transport priority lane on the N2. Therefore infrastructure provided under this component to date is fairly limited, but sufficient to permit N2 Express services. Planning for the very significant MyCiTi services serving Khayelitsha and Mitchells Plain in Phase 2 has commenced.
- Key infrastructure outputs thus far include:
    - 27.3 kms of bi-directional dedicated median busway, with a further 4.1 Kms under construction (cycle ways constructed for most of trunk routes);
    - Network of routes extending to 133 trunk kms and 317.5 feeder kms operating in mixed traffic
    - 35 trunk stations in use;
    - More than 600 feeder stops constructed (i.e. over 300 pairs of stops);
    - Three depots constructed and in operation.

Challenges

- Delays of buses on feeder routes as a result of congestion and other factors reduce service convenience and increases costs.
- Key challenges similar to most large infrastructure projects, including getting community support for construction, and removal of encroaching informal housing.
- High levels of universal access requirements driving up capital and operational costs. These needs to be reviewed to establish an appropriate balance between universal access and costs.

Lessons learned and included in this Business Plan Update

- The delays experienced on feeder routes, which in turn has led to adverse financial impact, has elicited a detailed study into bus prioritisation measures which could enhance operational speeds, reduce cycle times and reduce costs. This is discussed in this chapter.
- In previous MyCiTi business plans the motivation for using continuous reinforced concrete on trunk route surfaces has been explained. However the constraints it places on trenching for the provision of underground

services has resulted in a reversion to flexible asphalt at intersections.
- Lessons have been learned regarding signal prioritisation for MyCiTi, in order to increase operational speeds.

6.1. Introduction

This chapter addresses elements of the system infrastructure high-lighting continuing review and new developments and initiatives.

6.2. High floor or low-type bus technology

The system makes use of trunk and feeder vehicles. A key design principle is that infrastructure should support level boarding onto the correct bus types used on the relevant route. An important early decision in Phase 1A was the height of the trunk vehicle floor, which determined the floor height for the trunk stations. The options were either high-floor or low-type vehicle technology and related infrastructure. Please note that as described in chapter 5, low-type floor technology family comprises of low floor and low entry vehicles.

The advantages of high-floor technology include the following:

- Wheel wells, fuel tanks and other mechanical and electrical equipment minimally protrude into the bus floor, maximising the available floor area and the number of seats and thus the vehicle capacity. Low-type floor bus designs were believed to lose between four and eight seats to wheel-well intrusion.
- Since the wheels, engine and other mechanical equipment are housed below the 940mm high floor, a constant level surface, free of steps, is maintained between the doors, improving access for special needs passengers.
- At the time of the decision, high-floor buses cost less and had less complex maintenance regimes compared to low-type floor buses, where space for housing mechanical and electrical equipment is limited. A disadvantage of low-type floor bus designs is that mechanical and electrical equipment and fuel tanks must either be stored inside the vehicle, where they take up space, or put on the roof, where they are difficult to service. Hence, the reduced acquisition cost, maintenance costs and reduced axle load on the road pavement all contribute to reducing the overall operating cost of the high-floor based system.
- High-floor technology creates a more definable presence for the trunk routes, including the self-enforcement of the system due to the raised floor of the vehicle and stations.

6.3. Motivation to adopt low-type floor buses for future phases

The decision to implement a high-floor trunk bus system in combination with a low-entry feeder bus system (existing 9m feeder bus is classified as a low-entry bus) has resulted in a number of infrastructure challenges in Phase 1A:

- The difference in floor heights between the trunk and feeder bus systems has increased the number of station platforms required and the development length of transfer stations.
- This level difference has also required the introduction of ramps between feeder and trunk platforms, which has further increased the development length of transfer stations.
- High-floor platforms, coupled with the need to adhere to the maximum gradients required to facilitate universal access, has resulted in long entrance and escape ramps.
- The potential to extend trunk bus services along feeder routes is limited, since high-floor buses are not compatible with the feeder bus infrastructure. Due to this incompatibility, universal access could not be achieved along feeder routes using the high-floor buses.

The advantages of low-entry technology include:

- Stations are visually less intrusive.
- It is easier to operate complementary services where vehicles run partly on trunk and partly on feeder routes–because feeder and trunk stations are the same height.
- The ability to dock at left-hand kerbside stops at low passenger volume locations, where the driver can exercise access control. This removes the need for closed stations, which are expensive to operate (see paragraph 6.4 below). However various operational aspects require consideration.

At the time the arguments for high-floor trunk vehicles were stronger especially because, while the high-floor doors are on the right side of the bus, it is possible also to have a low-entry door with steps on the left-hand side, enabling it to be used at feeder stops if necessary.

The implementation of infrastructure that is compatible with both the feeder and trunk fleet offers huge operational flexibility and significant infrastructure savings. Considering the above challenges, the lessons learnt and the associated benefits of low-type floor vehicles, there are strong arguments for the City to implement low-type floor vehicles for all future phases. A trunk express service using low floor buses to Mitchells Plain and Khayelitsha offers a test case for this new technology, although its use for long haul or express services is not full in line with the intended BRT use of the vehicles.

The low-type floor system could offer greater flexibility as the service extends into high-density areas of the metro south-east. However, the challenge with these low-type floor buses is the reduced capacity due to the need for two right-sided doors in the low region of the vehicle, which impacts the number of seats that can be provided.

The City's team is currently evaluating the low-floor specification in order to maximise capacity without jeopardising passenger convenience. Low-floor buses that address this constraint may prove significantly more expensive. An assessment of bus occupancies for operational MyCiTi routes indicates that the selection of appropriate vehicle types must be informed by the nature of demand requirements for particular corridors and routes.

6.4. Median open feeder stop infrastructure

One of the key lessons learnt during the Phase 1A pilot rollout is that closed stations with pre-board validation (payment of fares) are associated with significant on-going operational costs. Closed stations are costly to build, operate and maintain. They are only justified where there are high volumes of transferring and/or boarding passengers. Hence the need for open stops along trunk bus routes to accommodate low passenger demand stops.

BRT trunk bus routes typically operate along dedicated median lanes and buses dock on the right at stations located on the median. The advantage is that passengers making use of a closed station have already pre-validated their cards and access the bus through multiple bus doors, significantly reducing dwell time. Pre-validation and fare collection is not possible at an open median station, since a closed building is required to install AFC gates and there are no validators at the doors on the right-hand side of the buses. Also, the bus driver cannot monitor validators at the right-hand side doors to ensure payment of fares.

The challenge was to design a left-aligned median bus stop, at which low-floor trunk buses could dock, hence facilitating ticket validation at the left-hand door within sight of the driver. The design also would have to consider the implication of providing a closed median station in the future when the land use potential is fully realised. The advantage is that low-demand stops can be accommodated along the trunk in the interim, without the operational costs associated with a closed station. Decisions regarding optimum station design are under review pending the results of further investigation.

The design of feeder bus routes, operating mostly in mixed traffic, requires careful consideration and treatment of bottlenecks and congested areas in order achieve consistent travel speed and ultimately a reliable bus service that reduces the variance of travel time for public transport users. Possible bus priority interventions include the following:

- Bi-directional median busways with median bus stops close to intersections;
- One-directional busway and one-directional virtual lanes;
- Queue-jumper lanes at intersections only, with signal priority;
- Charging for on-street parking in congested areas and near to stations.

These options need to be assessed in terms of their individual merits and within the context parking management, loading requirements, access requirements, road reserve requirements, system legibility, enforcement, future road network planning and cost-benefit ratio. The extent to which dedicated lanes and queue jumper lanes exist leads to a greater awareness of the public transport system by the public, which leads to increased ridership.

Similarly, as for trunk bus routes, the reallocation of road space for the prioritisation of feeder bus routes along congested roads is essential for the development of a reliable service. The logical place to access these median queue-jump lanes is to provide a bus stop at the approach of an intersection, where pedestrian access is available at a signalised crossing.

Implementing bus stop infrastructure that is compatible with both the feeder and trunk fleet offers huge operational flexibility and significant infrastructure and operational savings. There are, however, challenges associated with this type of stop. Particularly when being considered for a feeder route, the design places demands on the road cross-section in close proximity to the intersection. A central busway supported by median stop in either direction require a minimum 13.8m of the road cross-section to be incorporated into the existing available road reserve width, as follows:

- 0.60m clearance of general traffic to median barrier;
- 2.80m minimum median;
- 7.0m bidirectional busway (1 bus in each direction);
- 2.80m minimum median; and
- 0.60m clearance of general traffic to median barrier.

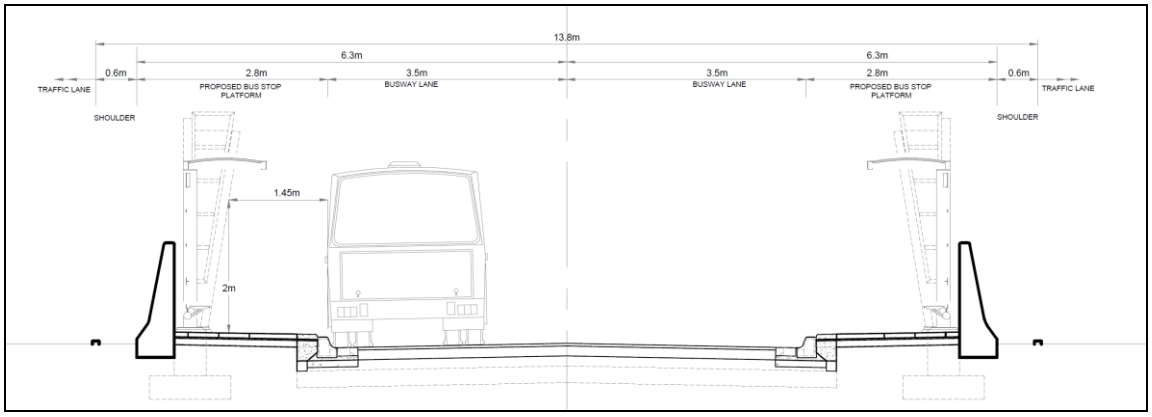
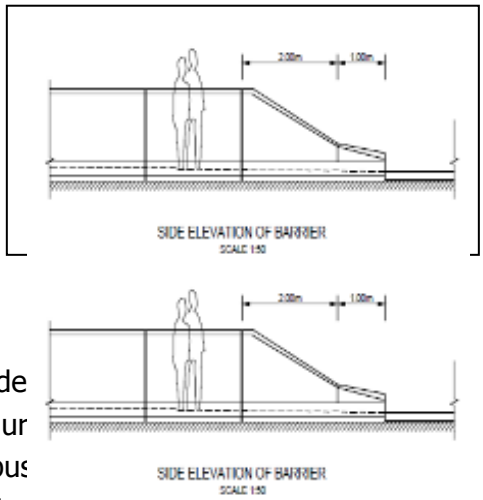


Figure 6-1: Typical busway cross-section incorporating left-aligned median bus stops, with the added advantage that buses can use the approach lane as a passing lane.

In the case of median dedicated queue-jump lanes associated with feeder route prioritisation, parking at the approach to the intersection may be sacrificed to accommodate bus lanes and median bus stops. The development lengths of these bus stop islands are directly proportional to the parking that will be sacrificed along the road edges in advance of the intersection. Parking enforcement is essential to ensure that the approach lanes are not obstructed by indiscriminate drivers.

However, where parking bays are impacted upon, discretion should be exercised in favour of the best public transport solution (within reason), since the number of users who can access the relevant part of the sidewalk and facilities via public transport is much higher than the number of users who will be serviced by parking bays.

Pedestrians waiting at median bus stops are exposed between two streams of traffic on a narrow island and hence safety barriers are required. These safety barriers may not be aesthetically pleasing and may negatively impact upon the streetscape. The environmental context is pivotal when considering the feasibility of implementing median open bus stops.



Further challenges include the following:

- Typically, in South Africa, signal plans do not allow for a de certain left and right turns movements are permitted dur Coupled with the introduction of a central busway and bus increased chance of vehicle-pedestrian conflict. Dedica currently being implemented and monitored to assess benefits.
- The introduction of a central queue-jump lane or busway will require a protected right turn phase, which will result in a delay to mixed traffic and, where appropriate, prohibition of right-turn movements.

The system flexibility and operational savings of associated open median stops outweigh the implementation challenges discussed, compared to the alternative of providing closed stations at low-demand stops. Furthermore, safe universally accessible pedestrian access can be achieved if appropriate consideration is given during planning and design. It is important that stops are correctly located, and close to signalised intersections.

6.5. Bus prioritisation measures

As mentioned in chapter 4, the divergence between actual and planned operational parameters is a driver of higher-than-anticipated operational costs. In particular, the speed of buses in mixed traffic and the resultant cycle times contribute towards higher operating costs due to increased fleet requirements.

This paragraph provides an overview of the moderation exercise, which investigated travel speeds and identified congestion hotspots. The City's approach towards providing greater prioritisation to MyCiTi buses on busy routes is discussed in terms of the applicable policy framework and the factors which need to be considered to determine the appropriateness of these measures.

6.5.1. Policy support for implementing bus priority measures

At a national level, the NDOT transport strategies, policies and legislative directives promotes a shift from previous supply-focused predict-and-provide transport strategies to proactive transport demand management (NDOT, 1996). The 'Moving South Africa Action Agenda' introduced the term 'tough road space management' and promotes transport

demand management as the principal mechanism to reduce total vehicle kilometres travelled, limit the number of cars on the road, and reallocate resources for investment in public transport (NDoT, 1999). The shift from a supply driven approach to demand-side interventions is legislated in the NLTA, which states under paragraph 11 (c) (xxii) that "the municipal sphere of government is responsible for formulating and applying travel demand management measures for its area".

In support of the transport 'demand' oriented approach, the NDOT prioritised public transport investment as a solution to rising congestion, introducing the phrase 'putting public transport first', indicating that public transport investment must be given a higher priority than private transport. In response to the perceived inadequacies of South Africa's public transport systems and increasing private motor vehicle dependence, the National Public Transport Strategy and Action Plan (NDOT, 2007) prioritised the planning and construction of high quality road-based BRT systems together with the revitalisation of passenger rail systems in the form of Integrated Rapid Public Transport Networks (IRPTNs).

In support of national directives and a pro-public transport policy, the City has invested significantly in the MyCiTi system. This investment encourages the increased use of public transport, but will likely not be sufficient to establish a change of lifestyles to favour of public transport unless public transport travel speeds are car-competitive and public transport is supported by appropriate measures to amplify the impact of public transport investments, including reducing standards for infrastructure for private transport.

The City's Travel Demand Management strategy (TDM) is intended to manage the supply and demand of car-oriented behaviour to reduce demand for Single Occupancy Vehicle (SOV) travel and redistribute this demand to other modes. A key objective is to encourage people to use public transport by providing a range of incentives for its use and disincentives against the use of private vehicles. One of the most important ways to address this issue is by prioritising access to public transport over access to other modes and prioritising the operations of public transport vehicles over those of private vehicles in traffic streams.

These policies require that public transport infrastructure for MyCiTi services must be designed in a manner to optimise, as much as possible, travel speeds of its services.

6.5.2. Review of system performance: travel speeds and variability

A review of system performance has been undertaken regarding the Phase 1 routes that were operational by mid-2014, linked to the moderation exercise described in paragraph 4.6, to assess travel speeds and variability and to identify the major congestion hotspots which contribute to increased cycle times. This review formed part of the detailed route-by-route analysis which used actual travel time information between each station/stop based on the LIO data, which was calibrated with manual surveys.

Red shaded areas on the graphs indicate 'hotspots' and route segments with comparatively lower average travel speeds.

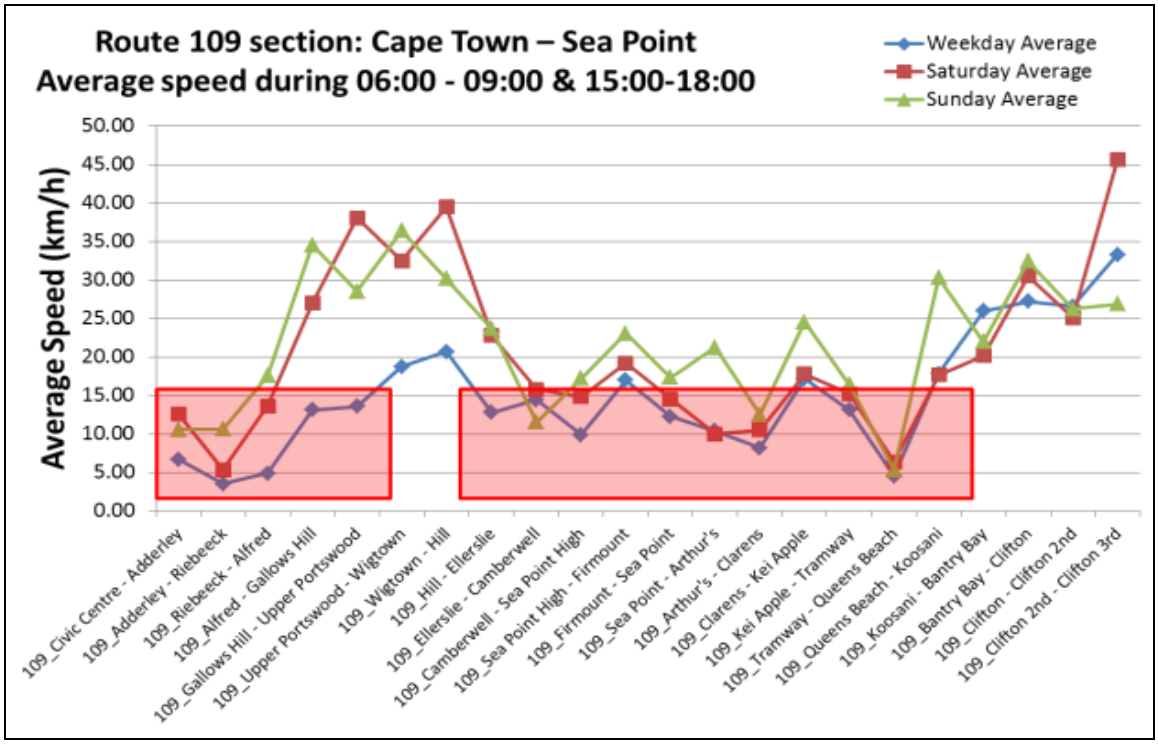


Figure 6-2: Average speed for route 109 (section: Cape town – Sea Point)

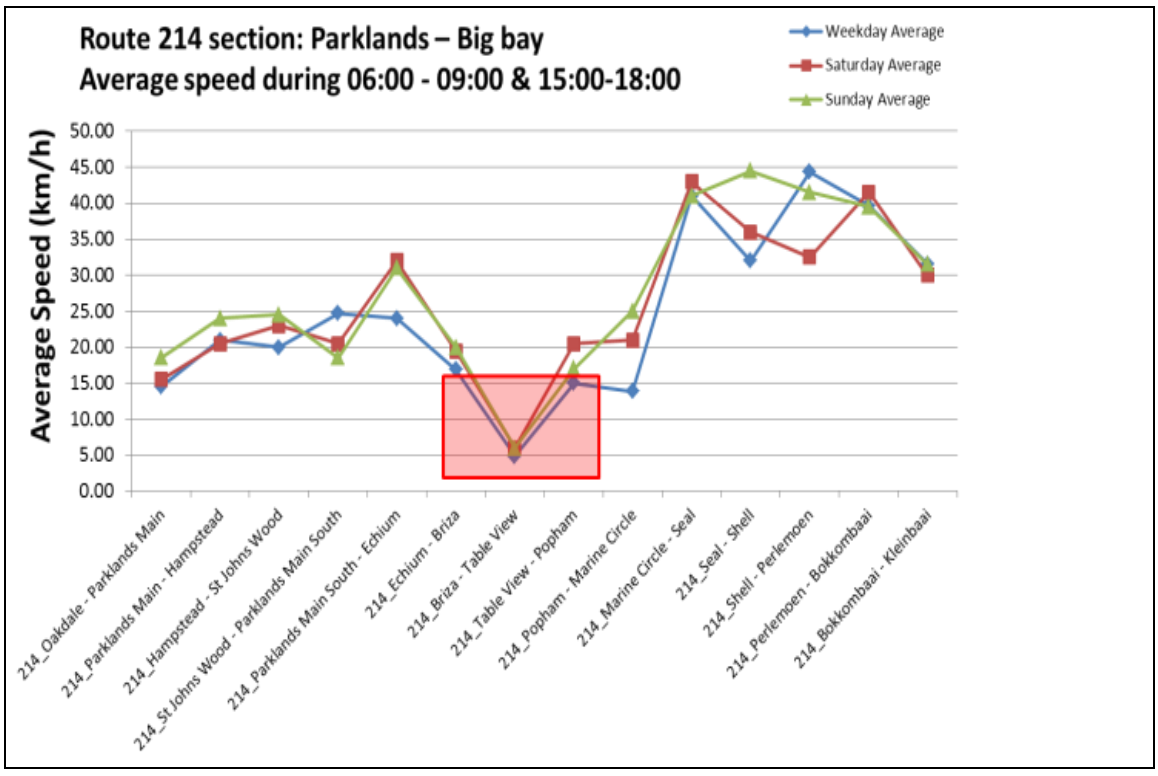


Figure 6-3: Average speed for route 214 (section: Parklands – Big Bay)

The analysis shows that there are a number of 'hotspots' and route segments with low average travel speeds and high variability. This increases route cycle times, which increases

the fleet requirement and influences operational costs. Low average operating speeds that are not car-competitive do not provide an attractive transport alternative to choice users.

In some cases it is not practically possible to address 'hotspots', but in some there is potential for improved operating speeds and reduced travel time variability through implementing appropriate bus priority measures.

6.6. Types of bus priority measures

A range of bus priority measures are to be considered to improve upon the efficiency of public transport operations, whether in a trunk or in a feeder environment. These include:

- Use of 'peninsula bus stops' where suitable. The bus stops in the travelled way and once passengers have alighted or boarded the bus departs with no need to weave into the traffic. This has already been extensively implemented in Phase 1.
- Priority treatment at signalised intersections giving the buses first opportunity to move from a dedicated lane to a shared lane, or priority treatment of a general traffic lane used by a bus where bus pre-emption technology detects that there is a bus in the lane approaching the intersection. Queue jump lanes, which allow MyCiTi buses to pass through localised congestion, are an example of bus-dedicated segments of the roadway. This measure can require the removal of kerbside parking on both sides of critical intersections where buses are currently delayed.
- Improved enforcement of traffic regulation infringements that impact on average operating speeds of MyCiTi vehicles, such as illegal loading zone utilisation, minibus-taxi operations and double parking (refer Chapter 11).
- Improved traffic signal settings to optimise the flow of traffic and changes to network capacity to the advantage of public transport.
- Optimising bus pre-emption measures, for example, by installing detection equipment in such a manner that buses can be met by a green light without having to drop their speed, except as is required for reasons of safety.
- Prohibition of right-turn movements where this can support vehicle flow and remove the need for additional signal phases. This requires ongoing enforcement.
- Introducing parking pricing in areas with extensive MyCiTi coverage as part of a suite of Travel Demand Management (TDM) measures to influence travel behaviour in favour of public transport.
- Providing semi-dedicated bus lanes in existing roadways for exclusive public transport use in peak periods. This requires infrastructure improvements and may require the removal of parking bays at intersections. Increased law enforcement is required.

These measures need to be assessed based on context-specific circumstances against a range of factors to determine the appropriate form of intervention. In exceptional cases,

where the current and future land use justifies intervention, and if there are additional urban design reasons to pursue this, it may also be appropriate to investigate other options such as transit malls and other exclusive or semi-exclusive public transport measures.

Determining the appropriateness of alternative bus priority measures

The appropriateness of bus priority measures needs to be considered based on a range of factors including:

- An investigation of the operating environment to determine factors contributing to low operating speeds, and optimising those factors to increase operating speeds;
- An assessment of actual operating speed against the target operating speeds for trunk and feeder buses under different conditions;
- An assessment of the level of demand for public transport (existing and potential) relative to general traffic flows;
- Capital costs relative to operational savings resulting from travel time improvements and reduced cycle times /capacity improvements over a long period, e.g. 30 years; and;
- The impact of bus priority measures on general traffic flows, taking into account policy directives to provide priority to public transport as against road infrastructure servicing primarily low-occupancy vehicle.

Consideration must be given to network changes for bus routes where it is not considered appropriate to implement bus priority measures, but where there is significant passenger demand.

6.7. Reversion to flexible asphalt for pavement design at intersections

MyCiTi designers had the option of using a continuously reinforced concrete (CRC) surface or a conventional flexible asphalt alternative. The design decisions for the trunk route surfaces were based on the ultimate development of the MyCiTi system, taking into account future bus traffic loading of the system, and on the following information on articulated bus axle loads supplied by vehicle operators:

- Front axle maximum load: 7.5 tons;
- Middle axle maximum load: 11.5 tons; and
- Rear axle maximum load: 12.3 tons.

A key issue was the related ongoing maintenance costs. While capital infrastructure cost comparisons revealed that the CRC rigid road pavement costs 10 percent more than that of a conventional flexible road pavement, this is more than compensated for by the reduced maintenance costs. When compared with a conventional flexible road pavement, the CRC

road pavement option requires little to no maintenance over its 40-year design life. These benefits are two-fold in that besides saving on direct maintenance costs, CRC also reduces the bus lane operational downtime.

The decision to provide a red pigment surface that clearly demarcates bus lanes exclusively reserved for BRT buses also influenced costing and maintenance regimes for the pavement options considered. The red pigment used with the CRC could be mixed into the concrete. Where asphalt is used, a specialised colourised surface treatment of the asphalt pavement is necessary to achieve a red surface. The most viable option for this was found to be Tyregrip, an epoxy-based resin incorporating red pigmented granite aggregate, both of which are imported. When the asphalt is resurfaced, as would be required during its 20-year design life, this surface treatment would also have to be renewed at significant cost.

Hence the decision to demarcate red bus lanes further increases the maintenance cost associated with the flexible pavement option when compared to the pigment CRC pavement.

This reinforced the decision in favour of concrete. The due diligence report, referred to in the introductory chapter also concluded that CRC is the most feasible option with best returns over the life time of the IRT.

The decision to construct CRC pavement does not come without its own challenges:

- Access to services covered over by the CRC bus lanes is almost impossible.
- Future service crossings are complicated, since trenching across the dedicated bus lane would involve breaking and reinstating the CRC pavement. However, this can be overcome by employing a directional thrust boring construction technique.
- Reinstating the CRC pavement would result in unacceptable disruption to the service.
- The construction of a CRC pavement requires concrete to cure for a minimum of 21 days and hence would necessitate long-term road closures which would result in unacceptable traffic delays during construction.

Hence, the decision was taken to revert to a conventional flexible road pavement construction at intersections, for the following reasons:

- Constructability and operational impacts: A flexible road pavement, made up of a combination of both gravel and asphalt, is quicker to repair than CRC pavement and would minimise operational downtime.
- Flexible road pavements can be repaired quickly without the need of lengthy road closures or diversions, limiting the impact on traffic.
- Flexible pavements are easier to trench and repair, and can be trafficked almost immediately after construction.
- The majority of service crossings are located at intersections, which utility companies would require access to undertake repairs.

6.8. Traffic signal improvements in support of MyCiTi

This paragraph should be read together with 6.5.

The objective is to minimise delays experienced by MyCiTi buses at signalised intersections while maintaining an acceptable level of service for general traffic. This is achieved through the application of an appropriate form of bus assistance at intersections.

There are three levels bus assistance:

- Queue jump assistance, which places the bus at the front of the queue at the intersection but does not reduce the overall delay;
- Catch-up assistance, which provides a green signal on demand if the bus is identified to be behind schedule, whether in a dedicated bus lane or a mixed traffic lane; and
- Pre-emption, which provides green signal on demand, either as a rule or if the delay experienced by the bus is greater than 50 percent of the intersection cycle time.

An acceptable level of service for general traffic is the lowest level of service that can be defended, considering the standard and capacity of public transport on a corridor or within an area and the need to manage the demand for travel by private vehicle.

Different assistance strategies are proposed for trunk routes, inner city MyCiTi / minibus-taxi hybrid routes, which serve the City Bowl, the Atlantic Seaboard and Salt River, as well as other feeder routes where signal priority is decided upon:

- Trunk Routes are, for the purposes of this document, all IRT Routes where dedicated bus lanes are provided and where all vehicles detected in these lanes can be assumed, with a high degree of certainty, to be buses. SCOOT is being implemented along most sections of these routes.
- Intersections where buses continue through the intersection without merging with the general traffic will generally receive no assistance as the delay experienced will be less than 50% of the intersection cycle time. An exception will be those intersections along the T01 route through Paarden Eiland, as well as other high volume trunk and feeder routes, at which busses are proposed to benefit from pre-emption. It is proposed that detection facilities be implemented that allow for "green on arrival" for busses. Catch-up assistance will be possible in future, provided that the MyCiTi control system is able to pass a "bus late" signal to the traffic signal controller.
- Intersections where the buses are required to merge with the general traffic when proceeding through the intersection i.e.: pre-signals, will always be inserted ahead of the general traffic, preferably twice per full cycle. Catch-up assistance will be possible in future, provided that the MyCiTi control system is able to pass a "bus late" signal to the traffic signal controller.

- Pre-emption within inner city areas may not result in an overall reduction in bus delay as multiple routes cross one another. Pre-emption will also interrupt progression which is currently seen as a requirement for an acceptable level of service for general traffic.
- In selected cases, catch-up assistance or pre-emption could be applied where it does not impact negatively on other bus routes. Such assistance can be provided once a suitable bus detection system is put in place that can inform the traffic signal controller of late buses.
- Pre-emption will in all cases be constrained by the minimum stage times for pedestrian movements.
- Inner City hybrids are those routes (or route portions) that have dedicated lanes but which are sections of the inner city route(s).

The appropriate strategies listed above will be applied.

Detection mechanisms

Where dedicated bus lanes exist, the detection of the busses is easily achieved by a number of means. The current de facto standard is buried magnetic induction loops.

There are some instances where video imaging has been utilised. While acceptable, these have proven to be less reliable than the induction loop method.

Detection of the buses where no bus specific lanes are evident will require the deployment of special detection technologies. In order to intelligently manage the signals while providing satisfactory bus assistance, the bus status will need to be communicated to the traffic signal controller. The details of how this is to be achieved will be the subject of another report. Implementation of bus assistance strategies will, in some instances, rely on the provision of detection systems by MyCiTi.

Radio transceiver devices interacting with the Trapeze system are currently under investigation jointly by Network Management Branch and Financial Management (AFC Branch) as a solution for bus detection in general traffic

7. Business structure and contractual arrangements

Chapter Summary

In the 2015 Business Plan Update the business structure and contractual arrangements are fully described, updated to reflect new developments since the 2012 Business Plan. These new developments and changes include:

- How the various responsibilities for MyCiTi previously dealt with by the two dedicated MyCiTi departments are now addressed within the 8 department structure of TCT.
- Minor changes resulting from the process of negotiations and experience of operations.
- The evolution in how routes are assigned and drivers controlled between the VOCs.
- A discussion, in the context of contractual arrangements and the moderation exercise on the scope to re-allocate services to the lower-cost operator in order to improve financial viability.
- Developments with future MyCiTi fleet requirements and procurement.
- Fare system risks.
- The management of the APTMS contract in the context of the termination of the contract, and the risks associated with this.
- The optimisation of station management, especially in the context of the moderation exercise.
- Updated detail on the advertising tender, which was not yet in place at the time of the 2012 Business Plan, and the need to re-assess it when the new tender expires in October 2015.
- Parking management focussing on parking in the vicinity of MyCiTi, and in the context of the City's new parking management tender.
- Retail in MyCiTi infrastructure in the context of the award of two retail tenders and negotiations around the implementation of retail in Century City.

Achievements

- Developed a business contractual model which builds in numerous incentives for efficiency and effectiveness, and codified these in legal and contractual agreements entered into with private service providers.
- After protracted negotiations signed long term (12 year) contracts with vehicle operators which drive important policy outcomes.
- Developed and concluded a station management contract which combines a wide set of services in and around stations into a single contract.
- Developed and concluded with a consortium of service providers a fare system contract which is a pioneer in bank based fare systems; and successfully implemented this contract.
- Won the 2014 International Mastercard award for the best bank based fare system in the world and shortlisted for the 2015 award.
- Designed and introduced along with the fare technology a distance based fare

system which is versatile, offers peak and off-peak fares, allows various fare products (including single trips and Mover packages) that help drive policy objectives, and can be used for detailed passenger movement analysis.

- Designed fare system in such a way as to achieve high level of compliance (evasion of 2%) while requiring limited inspection (the figure of 2%, verified through surveys, is exceptionally good by international standards).
- Barrier to entry of card based system partially overcome by issuing of free cards at opening of new routes.
- Developed a solid model for APTMS. This was partially operational but contract was terminated because of failures on the part of the contractor to meet contact requirements leading to system not yet being commissioned. The system is designed and much of the infrastructure is in place; the process to appoint a new service provider is almost complete.
- Developed a model for retail concessions; initial retail concessions awarded and further phase of procurement underway.
- Advertising contract designed and advertisers successfully procured, generating supplementary revenue of R12 m per year.
- Station management optimisation to reduce labour requirements (see 7.6.5).
- Reduced parking ratios around MyCiTi stations (PT1 and PT2 areas designated) to facilitate higher density around stations.
- Tariff for parking to enable card to be used to pay for park-n-ride parking charges designed, although not yet activated.

Challenges

- The bank based fare system, which was required in terms of national regulations, while offering significant advantages also creates challenges. These revolve around the very strict and rigid requirements associated with any banking product.
- Furthermore, national government has not yet secured inter-operability for the systems amongst the different banks, which means that when the current tender expires all cards currently in use will no longer be serviced unless the existing provider is re-contracted.
- Bank cards have an expiry date, which means that all cards will have to be re-issued once they expire, incurring significant costs; even new cards will cease to be supported if the current tenderer is not re-appointed at the end of the tender period unless national government secures its promised interoperability agreement
- Insufficient retail loading points for the system.
- The fact that the APTMS is still not commissioned presents significant challenges; operating systems based on the redundancy mechanisms for a sustained period is inefficient.
- Station management costs are high.
- Doors not functioning well at stations require additional staff to be employed increasing costs.

Lessons learned and included in the Business Plan Update

- The fare system needs to be reviewed in conjunction with national government to establish whether it is the most efficient technology.
- Focus on developing mechanisms using internet and mobile phones to update fare cards.
- High station management costs mean that a) the system needs to be designed to minimise the number of stations; and b) stations must be designed primarily around enabling them to be used successfully for retail purposes so as to minimize costs and maximise revenues – while still meeting operational requirements.
- Numerous detailed lessons are implied in the detailed updates of system design as contained in this chapter.

7.1. Introduction and overview

MyCiTi operations can be run optimally provided the following conditions are in place:

- The design of the system plan and the infrastructure has been done with optimal operations and appropriate reduction in operating costs in mind, or are adjusted on an ongoing basis to achieve that;
- The responsibilities are divided appropriately amongst the City's TCT departments and private sector companies contracted to perform operational tasks; and
- Within TCT, the operational management of the different components of the MyCiTi service is done in an integrated manner, with prudent financial principles and optimised operations being central in decision-making.

The business structure and contracts described here are based on present plans. Based on on-going lessons learned, it may be necessary to reconsider the business logic, incentive structure and contractual parameters during implementation and processes of tender and / or negotiations for the various services – depending on specific contextual factors.

A range of TCT departments collectively operate the MyCiTi system, along with vehicle operators, also referred to as vehicle operating companies (VOCs); automated fare collection (AFC); Advance Public Transport Management Services (APTMS) equipment and infrastructure, previously referred to as the control centre infrastructure; station management (SM), which includes rental of MyCiTi infrastructure for retail purposes; and an advertising contractor, responsible for advertising on MyCiTi infrastructure and for maintenance of bus stops.

7.2. Vehicle operating companies (VOCs)

7.2.1. Development after the 2012 MyCiTi Business Plan

The vehicle operating companies (VOCs) providing the service is at the heart of the MyCiTi system. The City concluded various interim contracts with three Phase 1 VOCs over a period of four years and then a long-term contract for Phase 1 in August 2013. In June 2014, the City concluded a three-year interim contract for the N2 Express Services with a N2 Express joint-venture company (JV), comprising two regional minibus-taxi association based companies, one in Khayelitsha and the other in Mitchells Plain, and with GABS, which was sub-contracted to provide the services on behalf of the JV.

For Phase 1 (A and B), the required services were divided between the three VOCs based on their market share prior to the introduction of MyCiTi, not taking into account the state subsidy to the scheduled bus operators. This was challenged by one of the operators, Golden Arrow Bus Services (GABS), but the High Court ruled that the City had the power in terms of the NLTA to negotiate an agreement that it considered appropriate, and that an operator who was not prepared to accept cannot have disagreements resolved by way of statutory mediation or arbitration. This decision was confirmed by the Supreme Court of Appeal.

The VOCs were appointed in terms of the interim contracts after a negotiation process run by the City in accordance with the City's supply chain management policy, and in terms of the long-term contracts in accordance with s41 of the NLTA. The negotiation was subject to achieving a reasonable negotiated agreement within a reasonable period and the City reserved the right to procure the urgent or immediate services through other means. Although the negotiations took considerably longer than was intended, they resulted in an agreement.

The key aspect to be negotiated between the City and the companies was the cost of providing the services. The preferred payment model places the risk where the decision-making for a given component lies, so that the parties can make decisions with regard to the component to reduce their respective costs. See the discussion in par 9.5.1.

The City provided the initial fleet required to provide the services at no cost to the VOCs.[6] This was necessary as the procurement of the buses was required long before the agreements with the VOCs had been concluded, because the projected fare revenue in the initial phases were expected to be insufficient to cover the cost of vehicles and because the City was able to secure grant funding. It is expected that any additional vehicles would be paid for out of fare revenue, but these would only be required in the event of significantly higher demand than anticipated.

[6] The options that were considered by the City were described and discussed in Annexure C to the 2010 MyCiTi Business Plan.

The VOCs may use the vehicles only to fulfil their obligations to the MyCiTi Operations Management Service, or for additional services authorised by the City, for example, contract services.

The VOCs were required to be ready to test and train drivers before a given milestone, and had to work with the City through the MyCiTi Project Office to coordinate vehicle procurement, infrastructure construction and the start-up of milestones.

In each VOC contract, initial feeder and trunk trips were allocated in line with that VOC's market share. No VOC has exclusive rights to any of the routes or a right to any specific route, which means that more than one VOC could be required to operate vehicles on any route. Additional trips, services and routes identified by the MyCiTi Operations Management Service may be added during the contract period, and the relevant kilometres will be allocated to the best-performing operator on a basis set out in the VOC contracts. The City is not limited in terms of moving kilometres to or from VOCs, other than by the general principle of reasonableness and the kilometres guaranteed in the contract, which were set at 75% of the projected kilometres required to allow flexibility regarding services rendered.

Each company is responsible for operating vehicles on routes as advised by the City by way of service notices. The detailed programming of services and frequency on the routes is determined by the MyCiTi Operations Department, with the approval of System Planning and Business Development, subject to the contracts with the VOCs.

Many of the elements of the moderation exercise described in Chapter 4 have a bearing on the roles and obligations of the VOCs and allocation of services to the companies. One example is the City's ability to re-allocate services to the lower-cost operator, subject to the provisions of the VOC contracts. This should result in significant cost reduction, since some of the VOCs' rates are higher than others. This may encourage some VOCs to renegotiate their rates downwards in order to secure higher levels of service allocation.

After an initial maintenance period that applies only to a limited number of vehicles in terms of the City's contract with the vehicle supplier, the VOCs are responsible for the maintenance of the vehicles. For vehicles procured in the last set of procurement, the VOCs are responsible for maintenance from day one, and may conduct the maintenance themselves (provided their workshop is certified by the supplier to do so) or contract a third-party maintenance provider. The City's operational fleet team, together with the VOCs, are responsible for ensuring that detailed maintenance records are kept regarding each vehicle. The VOCs are required to run 'scout' vehicles with the aim of running as many kilometres as possible over the initial five years which enables the projection of maintenance costs – resulting in detailed maintenance information which will be used to renegotiate maintenance regarding some of the vehicle types at the end of the five years.

The 2012 MyCiTi Business Plan provided that no other scheduled bus or minibus-taxi services would be allowed to run on MyCiTi routes, subject to the provisions of the NLTA in terms of which existing operators can refuse to accept the compensation payments offered and continue to operate in competition with the MyCiTi system until their licences expire,

and subject to the continuation of most of the services that only partially overlap with MyCiTi routes. Some services that do not run in competition to the MyCiTi service but merely intersect with MyCiTi routes, such as metered taxis and contracted bus services, will also continue to run. This principle has been reconsidered in this Update, and is now subject to the proposed MyCiTi / minibus-taxi hybrid model discussed in para 10.1.6.

The duration of the long-term contracts is 12 years, which required the City to undertake prior consultation with affected parties to comply with s33 of the MFMA. Approval in terms of s 33 was given in August 2013.

7.2.2. Quality of service mechanisms

Monthly payments to the VOCs are subject to deductions for penalties for non-compliance with quality of service standards. The operating contracts include of 'quality of service' indicators. As an incentive, every quarter a portion of the penalty payments made by VOCs in that period are to be paid to the best-performing VOC, provided that it has met a high standard of performance during that period.

Penalties are imposed against a VOC for infringements such as:

- Failure to comply with the bus schedule, including not departing early from timing points, or departing more than five minutes late;
- Failure to follow the route;
- Vehicle breakdowns as a result of non-compliance with the maintenance schedule;
- Failing to display the correct destination information;
- Failing to pick up or set down passengers at authorised stops and stations;
- Vehicles in an unsatisfactory condition, for example, a dirty exterior or interior; and
- Speeding and violation of other transit regulations.

At the same time, the City must take reasonable steps to ensure that the MyCiTi segregated lanes and corridors will not have illegal competitors, subject at all times to the provisions of the NLTA.

7.3. Vehicle procurement

7.3.1. Phase 1 Service Area

By February 2015 in the Phase 1 service area 87 high floor buses (79 x 12m rigid and 8 x 18m articulated buses) were being operated by the three VOCs. These buses were supplied by Volvo (52) and Scania (35), with 10 being maintained by Volvo under a fleet-maintenance programme for an initial period, while the balance are maintained by the VOCs.

Scania is still to supply 7 x 12m rigid high-floor buses and 24 x 18m articulated high-floor buses (bus trains).

The feeder bus fleet of 221 low-entry buses (9m Optare Solo SR buses) were supplied under contract by Busmark 2000 (Pty) Ltd, one of which written off after an arson attack. These vehicles are initially being maintained under a maintenance service contract by the supplier. VOC staff is being trained to maintain the buses through learnership programmes.

7.3.2. N2 Express fleet requirements

Volvo was awarded the contract to supply 20 x 12m rigid low-floor buses and 20 x 18m articulated low-floor buses (bus trains) for use on the N2 Express routes. Delivery of buses was delayed due to strike action and only six were delivered in time for the start of the initial N2 Express services. By September 2014 all 20 12m buses had been assembled and were entering service. Delivery of the 20 articulated buses was expected to start in late 2014.

7.3.3. Bus production in Cape Town

Busmark, tendering in its own name or as the manufacturing partner of tenderers, was part of three MyCiTi tenders for the 9m Optare feeder buses, the Scania 12m and 18m high-floor buses and the Volvo 12m and 18m low-floor buses. The Optare buses were assembled by Busmark from complete knock-down kits in Elsies River, Cape Town, where up to 180 local personnel were employed. In late 2014, the buses for the balance of Phase 1 and the N2 Express were being assembled in a new factory built by Busmark in Blackheath, Cape Town, employing some 240 people.

The manufacturing and delivery was severely impacted by strikes and protracted industrial action during 2013. Other challenges included the recruitment of skilled staff and the complexity of the Volvo low-floor chassis, which were the first to be assembled in South Africa. The order also included the first bodies built locally which meet the minimum threshold of 80% local content and production. These challenges have now been largely overcome.

Some of the Scania buses are being manufactured in Busmark's facility in Randfontein.

7.4. The Automated Fare Collection (AFC) contract

Commuters pay for their travel mainly through the use of smartcards, which they must purchase (or obtain for free under certain circumstances) and top up for travel value at stations, retail outlets, card-vending machines or through internet purchases or via other payment methods still under development. From October 2014 once-off users can use a **my**fare type card for a single journey. These cards can be purchased at stations, and in time through vending machines or retailers, including hotels and guest houses.

The AFC contractor is responsible for implementing, maintaining and operating a reliable, quality assured and transparent AFC system.

A very important mechanism built into the fare system is the use of Mover points, which allows passengers to load travel points onto their cards. The travel points can only be used for travel on MyCiTi, and serves as an alternative to money loaded (the latter, also called the EMV cash purse, which could be used for purchases up to R200 at any participating retailer). The City encourages use of Mover points by offering much reduced fares when using this mechanism. The benefit of Mover points to the City is that it is prepaid with the funds accruing immediately to the City, while surplus funds loaded as cash is held by the acquiring bank, until utilised to travel on the MyCiTi system. The Mover system also encourages loading of higher amounts, which reduces demand for cashier services at kiosks. This reduces queue lengths and therefore improves customer experience.

The fare rules require passengers to tap in when entering the system (when a boarding fare is charged) and tap out when leaving the system (when a distance-based fare is charged). Free open transfers are permitted within set time limits, encouraging more extensive use of the system by passengers – while a distance-based fare applies for onward travel based on the distance covered. The system automatically charges a non-closure fare (or penalty) for failing to tap correctly (assuming this may be due to fare evasion) – and this rule drives an exceptionally high level of commuter compliance and significantly reduces fare evasion (measures at 2% in a recent survey, compared to evasion of up to 35% and more in other systems). However, the fear of incurring penalties may discourage some passengers from using the system.

Integration of the MyCiTi's AFC system with the banking industry has been realised through agreements between all participating banks in South Africa, in cooperation with NDOT. It has placed MyCiTi at the forefront of modern fare system technology and has received an international Mastercard award for 'Best Bank Ticketing Scheme' in 2014. However, because this is a new technology, there are complexities and more time is required to develop functionalities. These are also restricted by the need to comply with banking standards and FICA requirements that do not apply to ticketing systems across the world.

A crucial impediment to achieve interoperability by using the full functionality of EMV cards is for the banking sector to settle switching arrangements between the banks. This has been long outstanding. Absence of such arrangements makes this fare medium much less appropriate and useful, and may call into question its use into the future.

In the interim, there is a major problem in achieving widely available distribution channels for buying cards and loading value. One way to address this, devised since the 2012 Business Plan, is a mechanism that allows users with insufficient funds on their card's e-purse and no stored transit products to travel one trip on credit. This is to get them to a point where they can load value. The cost of this trip is deducted when next the card is used. Once the trip-on-credit has been paid for, another one becomes available. This compensates for the current inadequate distribution network, by allowing passengers to travel to a point where they can load, even if the money on their card has run out.

7.4.1. Improvements and savings

Based on lessons learned to date a number of improvements to the fare system have been implemented or are considered.

A daily inspection service will be implemented to curb fare evasion. Although currently low, without inspection this is likely to increase significantly over time.

The use of paper tickets, especially for refunds, adds to loss of revenue if station staff and drivers to not adhere to protocols. Paper tickets are being phased out, with refunds done electronically. Paper tickets will only be used when the system is down.

Fare-related transgressions by the station management staff, especially cashiers, will be strictly monitored and penalties applied. The same applies to transgression by drivers, especially on feeder routes.

Managing the efficient use of AFC assistant services to issue free cards and sell **my**connect cards on the buses during the rollout of new services will contain these costs.

Some manned kiosks may supplemented or replaced by card-vending machines and top-up vending machines, where appropriate, especially at stations with low demand.

Once solutions are in place, users will be encouraged to use cell phones and the internet to load value. Other payment methods will also be investigated. The aim is to reduce pressure on kiosks and improve the customer experience.

7.4.2. Review of the fare system

The AFC system has now been operated for nearly three years in stages and a comprehensive review of the design and technology is required. This would include:

- A review of the total cost – including implementation, operations and maintenance – of **my**connect compared to other mifare-type systems to determine whether or not the **my**connect mechanism, as currently required by national government through legislation, is the most cost-effective and appropriate way of moving ahead.
- A review of the limitations of the current AFC system, especially the level of scalability, in view of the planned significant expansion towards achieving the goal of a single integrated and city-wide fare system.
- A review of the existing business and fare rules to determine whether or not they need simplifying.

7.5. Advanced Public Transport Management System (APTMS) contract

The APTMS is a vehicle and system management system, which includes computer-aided system planning/scheduling (tendered as the DIVA system) and real-time system controlling systems (tendered as the LIO system), automated vehicle location system, advanced real

time commuter information system, two-way communication between the Traffic Management Centre (TMC) and drivers, kiosk staff and commuters, security and surveillance systems inside the stations and on-board the buses, and data management.

Without the APTMS, the City would have inadequate knowledge of whether services are operating optimally, and thus be unable to adjust services and make service decisions in real time as required. It would also be unable maintain standards. The APTMS also assists with the reconciliation of payment to the VOCs, since the system is able to track the location of each vehicle and determine whether the VOCs are operating on the appropriate route, operating to the correct schedule and what distance each vehicle has travelled.

There are two distinct APTMS-related functions. The APTMS contractor is responsible for all APTMS-related hardware and software in vehicles and stations, and for building a facility in the TMC from which the system can be planned, controlled and monitored on a daily basis. This contractor is also responsible for maintenance for the full APTMS contract period of seven years.

The Operations Control Centre (OCC) is the facility initially installed by the APTMS contractor. Once installed, it is operated by the IRT Operations Service or for an initial period of up to two years by the APTMS contractor. Using the tracking system on vehicles and displays and other tools, including global positioning systsm (GPS) and tracking software, the OCC monitors all vehicles in operation in real time.

Figure 7-1: The Operations Control Centre situated at the Transport Management Centre.

7.5.1. Risks (see also 13.6)

Due to the non-provision of the APTMS services by the previous contractor, and the hiatus since their contract was terminated, significant risks have emerged. This is due to certain functionalities not being available and the implementation being incomplete. In addition, because of the absence of maintenance of equipment and systems already installed previously available functionality is now also degrading. Examples of this include the passenger information displays (PIDs), the mobi site and the cameras, the impact on two-way communications between the vehicles and the TMC, as well as between the intercoms on the stations and the TMC and the SM Contractor.

There is also a negative effect on passenger perceptions.

Using manual rather than electronic processes as a result of not having an APTMS contractor is a risk, since human errors are introduced.

7.5.2. Recommendations

The following measures are recommended:

- A detailed review of the current operational model in order to take full advantage of the current software, which would also provide further opportunity for savings; and
- A detailed review of where equipment and software should be located in order to take full advantage of its extensive system planning and modelling capabilities.

7.6. Station management (SM) contract

The SM contractor is responsible for general management services on the stations and for upholding the MyCiTi system's quality goal of good customer service. The SM contractor's personnel at the station are in charge of the station and as such must be skilled and trained to multi-task.

7.6.1. Main functions

The main responsibilities of the SM contractor are:

- Management of cash and payment systems, including the supply and management of card and ticket sales at trunk station kiosks and some off-station kiosks;
- Passenger management, access control, validation and fare evasion at stations;
- Information, including the provision of passenger information at kiosks and through station staff, call centres and communication;
- Security and CCTV surveillance;
- Technical facilities management, including minor maintenance at stations;
- Maintenance of landscaping around stations and possibly along exclusive busways;

- Cleaning;
- Possibly the management of parking in areas around the stations, which would manage parking impacts and enhance security around stations; and
- The management of retail at stations.

The first tender for SM services is for a period of six years. The City has the option to terminate the contract after 2.5 years and six months' notice if the City is not satisfied with the contractor's services or if the City wishes to amend the design of services.

7.6.2. Station Management optimisation

As part of the moderation exercise, aimed at ensuring efficient, cost-effective services and financial sustainability, measures have been taken to reduce station operating costs. The intention is to reduce the impact on customer satisfaction by improving the functionality of the AFC system, such as the one-trip-on-credit rule that took effect in the second half of 2014, and enabling the loading of Mover packages at places other than at station kiosks.

Kiosk staffing and hours

Kiosks have been open for long hours, even where demand has been low. Based on information about actual loading at each station, hours have been fine-tuned. Demand varies from station to station. Transactions at some stations are highest in the morning and afternoon peaks, while some are busy throughout the day. Kiosks with significantly lower levels of demand have been closed. Kiosks with high weekday demand, but low weekend demand, operate weekday services only.

Other ways to optimise station staffing

Extra staff has been employed to deal with malfunctioning equipment and queue management, which has resulted in unsustainable costs. The City is making improvements to station doors and public information displays (PIDs). This reduces the need for staff to manage queues, manually operate station doors, and to inform passengers of the destination of departing buses where PIDs were not working due to inadequate APTMS services. The City is also reviewing the need for security staff at select stations where CCTV cameras and the intruder alarm systems are operational and sufficient.

7.7. Advertising on MyCiTi infrastructure, and management of bus stops

The advertising tender will expire in October 2015. An evaluation of the current tender and contract is planned to look at improvements, which may include the expansion of advertising tenders to cover the whole or larger parts of the city; increasing income by providing that, for each site where advertising is sold, the full tendered amount is paid to the City; and other advertising opportunities, such as digital TV, and illuminated advertising on lampposts.

With regard to infrastructure, TCT seeks to ensure that infrastructure used in different areas is of a comparable nature and quality, while learning lessons from previous roll-outs and improving the design and materials on an ongoing basis. Vandalism and theft is ongoing and expensive. Requiring the advertising contractor to undertake ongoing repairs of this nature results in a higher advertising contractor tender amount, reducing income to the City.

Community should assist the City in reducing vandalism and theft. In some instance of repeated damage, the City will permit the contractor to replace components with materials that are not prone to the same level of vandalism and theft. This means that, although the City aims to ensure that infrastructure across the City is of a comparable nature and quality, some infrastructure subject to repeated attack may have a different look and functionality.

7.8. Parking management

The TCT Planning Department is responsible for parking policy and the TCT Network Management Department is responsible for parking management.

Where improved public transport services are available, such as in areas located within 500m of MyCiTi stations and stops, parking fees should be increased and parking management should be expanded to achieve the following objectives:

- Manage parking in areas of higher parking demand;
- Increase turnover for high-value parking bays to improve short-term access to more vehicles, in support of surrounding businesses;
- Minimise the negative impact of additional parking demand from passengers around MyCiTi stations and stops, on the surrounding neighbourhoods and on traffic flow;
- Discourage use of private cars and to reduce demand for parking, to release parking bays for public transport prioritisation measures and to release parking areas for other productive urban land uses to take advantage of, such as pavement café space;
- Use the presence of staff managing parking areas to increase surveillance of non-motorised transport (NMT) corridors, and thereby provide a deterrent to theft and to improve the safety of pedestrians, including MyCiTi passengers;
- Promote the use of MyCiTi services specifically and public transport in general;
- Facilitate the use of the feeder services over time through parking tariffs;
- Develop an integrated public transport fare and tariff charging system, through use of the **my**connect card; and
- Ensure a profitable, but fair, service that can pay for itself and which can offset operational costs associated with providing high-quality public transport.

The City is in the process of implementing a new parking management tender to appoint a suitable contractor to manage parking on City-owned land in Cape Town. This includes park-and-ride facilities and excludes off-street parking managed by City Improvement Districts

(CIDs), and other off street parking areas. The tender is likely to be implemented in the 2015/2016 financial year.

7.9. Retail on MyCiTi infrastructure

TCT intends for retail businesses or other users to lease or be awarded concessions for retail infrastructure at MyCiTi stations, depots and staging areas. These retail businesses will be of a high standard and compatible with the specific needs of users of the MyCiTi services.

The term 'retail' is used in a wide sense, and can include space for not-for-profit organisations. The retail opportunity must be financially sound. The annual projected revenue should, as a minimum offset its anticipated operational costs, and must enhance passenger convenience and amenity value to the station.

The objective is to improve the overall cost-effectiveness of MyCiTi and to provide income to TCT. Such income will be further enhanced through other forms of capturing the value created by public transport infrastructure, especially the purchasing power of passengers, whether at a smaller scale or at major stations and interchanges. Income from retail related to MyCiTi services will be accounted as MyCiTi income, and income related to retail on or associated with other TCT infrastructure will be accounted as TCT income. Income from retail located on or associated with MyCiTi infrastructure is reflected as system income. TCT will conduct feasibility studies to determine the potential of retail opportunities. Where viable opportunities for retail are identified, they will be accommodated in the existing and/or planned facilities constructed for MyCiTi services.

As an example, Century City Station has been identified as a location where significant potential exists for a larger integrated retail and ticketing kiosk. Negotiations are advanced with the developers of the Century City precinct and with the local property owners' association for the provision initially of a smaller retail and ticketing facility for the MyCiTi Century City station. The aim is to expand this.

In some instances, leases for retail business may initially be granted for a period of three years or less, with the aim to extend this for a longer term, subject to approval from the City, where appropriate. The retail businesses will be granted the right to use the retail infrastructure in terms of lease or concession agreements. The term 'lease or concession agreements' and related terms are used here in a wide sense, including sub-leases, for example by the SM contractor, and contracts regarding concessions.

By mid-2014 two tenders had been awarded regarding retail on MyCiTi infrastructure. These include some retail sites at Civic Centre station and vending machines in a combination of MyCiTi stations. For further retail opportunities in Phase 1 areas, the City has undertaken a retail investigation to solicit interested parties from the retail sector, improve the design of future contracts and identify suitable stations for retail opportunities. This retail investigation will be used to issue future tenders. The next set if tenders are planned to be issued

following the commencement of full Inner City services, to ensure that tenders submitted appropriately reflect the value of retail opportunities within a fully operational system.

To reinforce TCT's vision of comprehensive Transit Oriented Development (TOD), large-scale commercial opportunities linked to MyCiTi stations and other public transport infrastructure must be considered in the future planning and implementation of BRT and other public transport services.

8. Institutional approach and current staffing structure

Chapter Summary

At the time of the 2012 Business Plan the decision to establish Transport for Cape Town had been taken, but there was relatively little detail relating to it.

This chapter in the 2015 Business Plan Update not only explains the TCT structure in much greater detail, but also summarises TCT strategy and seeks to address the question of how MyCiTi is managed in an integrated way in the context of the establishment of TCT.

Achievements

- Institutional capacity built – including substantial new capacity on system Planning, business development, industry transition, infrastructure, fare system design and implementation.
- Formation of TCT, creating the institutional basis for integration of responsibility for all forms of public transport through its matrix structure.
- Development of short, medium and long term strategic approach.
- The formalization of the organizational structure and branding, which was concluded in the gazetting in the TCT Constitution Bylaw, No 7208 of 2013.
- The establishment of the Municipal Land Transport Fund.
- Development of Business Plan and application for the reassignment of the Contracting Authority Function to the City of Cape Town.
- Development of Business Plan and application for the reassignment of the Regulating Entity Function to the City of Cape Town.

Challenges

- MyCiTi is a catalytic project for the City and therefore cannot just rely on a single department methodology, especially when moving towards integrated, intermodal and interoperable public transport. Through the establishment of TCT the administrative response has been for a collective matrix approach. This needs to be consolidated over the next 18 months. The catalytic programme with be managed by the Director: Infrastructure, who reports to the Commissioner: TCT.

8.1. Various municipal services

The implementation of public transport affects various other municipal services. Service level agreements may be required with some of these services, including:

- The Security Surveillance Unit, to monitor the additional CCTV cameras in busways and on stations;
- The Solid Waste Department for the removal of refuse;

- The Stormwater Department for the cleaning of streets and stormwater drains; and
- The Metro Police for the provision of policing and traffic management services required to maintain dedicated busways.

It is not envisaged that these services will impose major new obligations on other departments outside of normal growth parameters. The costs for services provided by other departments are divided into core and non-core, based on whether or not such costs are considered to be directly related to MyCiTi services (core), or whether they are considered an expansion of ordinary municipal services (non-core). The costs, and the principles for distinguishing between these two types of services, are discussed in Chapter 7.

8.2. Transport for Cape Town (TCT)

Government's objective through the NLTA is for metropolitan cities to become the key focus of responsibility for the implementation and management of public transport. This objective has been substantially advanced in the City of Cape Town with the establishment of a transport authority.

Prior to the gazetted TCT Constitution Bylaw No 7208 of 2013 and the establishment of TCT, the City of Cape Town's transport authority, the City had largely only a planning role in public transport, which in reality had very little impact either on the development of the system or actual ongoing integrated public transport operations. The implementation of the MyCiTi project has created significant capacity, which, combined with the establishment of TCT as an integrated transport authority, is increasingly able to perform the leading transportation role as envisaged by the NLTA.

TCT is the custodian of all transport matters within the City itself, interfacing with surrounding municipalities and other transport-related stakeholders with single point responsibility for transportation matters for the Cape Town Metropolitan functional area, which is not only the City of Cape Town metropolitan area but also across to the adjoining local municipalities

To ensure the full implementation of the parameters and requirements of the NLTA, the following elements are applicable:

8.2.1. By-law

The Transport for Cape Town Constitution By-law, No 7208 of 2013 has been gazetted, and prescribes the organisational structure of TCT.

8.2.2. TCT structure

The former Transport, Roads and Stormwater Directorate has been streamlined, consolidated and developed into a matrix structure with eight new departments (refer to Figure 8-1) which now forms the City's transport authority. The organisational structure was

approved by Council in 2013 and has come into operation. The TCT matrix organisational structure follows function and delivers on the mandate of integrated, intermodal and interoperable public transport and network management. The network includes roads, stormwater, bridges, traffic lights, public transport system and NMT.

Thereafter, to improve the consistency of the approved organisational structure, an additional functional review was carried out and further amendments to the structure were approved by Council in May 2014. TCT became fully operational with the related human resources and financial structures on 1 July 2014. This approach has ensured longevity in the governance structure so as to facilitate service delivery that is performance-orientated and investment-driven.

The new structure gives effect to new functions such as the Contracting Authority and Municipal Regulatory Entity, which stimulates cross-functional synergies and efficiencies within a single interdisciplinary framework. Further, should additional functions be added over time, such as the management and oversight of rail, the functional structure will be able to accommodate it in all of the eight departments.

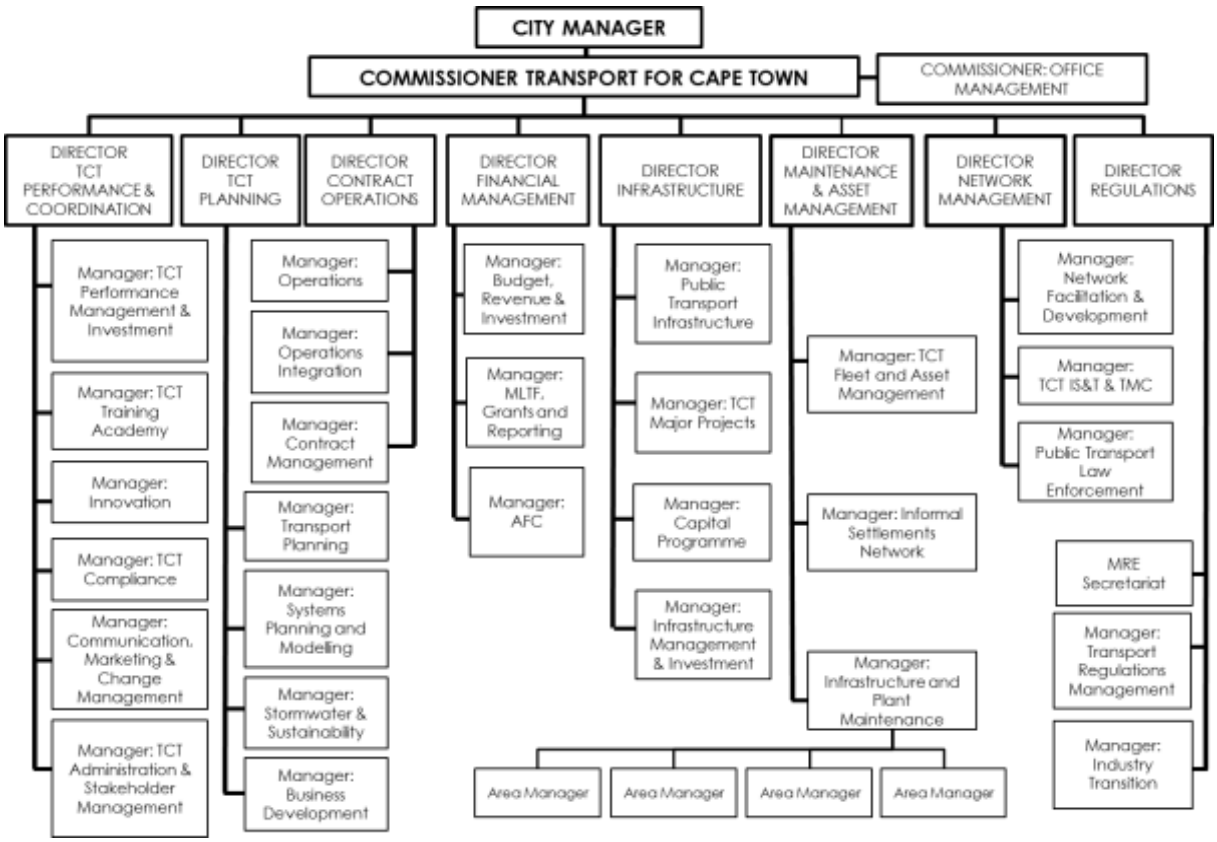


Figure 8-1: TCT organisational matrix structure

The new TCT organisational structure delivers on the mandate. It is based on a matrix approach to give effect to efficient and targeted service delivery and specifically to enable the achievement of a sustainable, intermodal transport network with integrated and interoperable transport systems for the benefit of commuters, communities and stakeholders

of Cape Town. It ensures longevity in the governance structure so as to facilitate intermodal transport that is performance oriented and investment driven.

It also provides the opportunity to drive down the cost of the access priorities for users.

One of the features of TCT's structure is that it is designed to ensure that TCT takes a holistic perspective across its nine functions, rather than risk each function being considered in isolation from the others.

8.2.3. TCT principles

The overarching principle that TCT adopts across its nine functions is an investment and performance driven approach. That principle is itself broken down into five further principles (known as 'the principles') that TCT must adhere to for each function:

- Accountable service delivery;
- Viable costing and income generation;
- Proactive management of risk;
- Effective communications and stakeholder management; and
- Rapid deliverables that are sustainable.

Municipal Land Transport Fund

The TCT Constitution By-law, No 7208 of 2013 has paved the way for the establishment and functionality of the Municipal Land Transport Fund (MLTF).

Long term strategy

The last component of the TCT governance structure that has come into effect as a result of the By-laws in the past financial year it is of critical relevance to the long-term sustainability of service delivery, and in this context integrated public transport, is the TCT four-pronged Long Term Strategy, which currently has a 15-year timeline for implementation.

It is for this reason that TCT was established by way of a By-law. By-laws are inherently long term in their nature. They cannot be changed readily in the way that a policy might be changed for example. This is the right approach for TCT because it enables it to be the platform for long-term investment in integrated, intermodal and interoperable transport and the related network for the City.

In summary, the four long-term strategies are:

STRATEGY A: 3 year timeline

The focus of this strategy is on the consolidation of the TCT transport authority model with the focus on performance-orientated service delivery. Within the context of the IRT the systems, structures and processes primarily relate to the establishment and consolidation of the Contracting Authority and the MRE.

STRATEGY B: 5 year timeline

The focus of this strategy is the consolidation of the TCT transport authority financial management strategy and investment logic under the MLTF. The MLTF is a critical tool for giving effect to sustainable transport in that it needs to explore all financial mechanisms available to the transport authority to enable integrated transport.

STRATEGY C: 10 year timeline

The focus of this strategy is the rollout of the integrated road and rail methodology with the focus on one brand, one ticket and one integrated timetable. The rollout of integrated public transport within the parameters of the newly approved IPTN is the essence of this strategy.

STRATEGY D: 15 year timeline

The last strategy is critical for the overall sustainability of all aspects of transportation that fall under the auspices of the TCT Constitution Bylaw. This strategy aims to ensure that the overall costs of the User Access Priority are halved within the 15-year timeline, for the benefit of the citizens of and visitors to Cape Town. The first step in this process is for TCT to determine its Transport Development Index, which will set the baseline from which to work and set the various projects and programmes. The full rollout of the IRT programme is one of the critical programmes in achieving this.

8.3. MyCiTi structure

The MyCiTi service has been fully embedded within TCT structures in that all functions required to be implemented to achieve the goals of this service are now embedded in the job descriptions of directors and managers and the interdependencies have been strengthened to achieve the consistent and able roll-out of an integrated transport structure that Phase 1 and the N2 Express have spearheaded in terms of transformation.

In order to ensure that this matrix methodology is realised and at the same time the programme with all of its intricate interdependencies are consolidated, a focused and dedicated oversight is necessary to ensure that all work streams are seamlessly co-ordinated and managed based on the primary objectives of an integrated rapid public transport service.

TCT is committed to maintain a dedicated responsible financially managed and driven mind-set across the TCT structure, with flexibility in the system and job descriptions to allow for changes to adapt to this dynamic programme. It is important that the structure to manage the MyCiTi service and its related programme provides a system to monitor performance of operations and hold respective work streams accountable for deviations in performance, should specified parameters be exceeded. This will assist in improving the planning and forecasting ability to provide operations with attainable goals.

It is appreciated that a pioneering project of the magnitude of the MyCiTi system requires dedicated and committed leadership to focus on the critical elements of consolidating a

sustainable business model. The service must be managed on business principles to ensure its viability and success.

MyCiTi is a catalytic project for the City and therefore cannot just rely on a single department methodology, especially when moving towards integrated, intermodal and interoperable public transport. Through the establishment of TCT the administrative response has been for a collective matrix approach. This needs to be consolidated over the next 18 months. The catalytic programme with be managed by the Director: Infrastructure, who reports to the Commissioner: TCT.

Planning, implementation, coordination and management of the system are performed by an integrated TCT organisational structure comprising eight departments within the City administration, reporting to the Commissioner: TCT, as follows:

- The Planning Department, responsible for the CITP, for the system and business planning of the IRT as per the business plan and advising on fare levels and other system functions. This, in turn, informs the work of the other TCT departments.
- The Infrastructure Department, responsible for infrastructure provision.
- The Contracts Department, responsible for operations and the contracting authority. It comprises three branches, with a fourth planned for facility management. The Integration branch is responsible for setting uniform operational standards across all public transport services and the operational integration of public transport services including rail. The Contracts branch is responsible for preparing, negotiating and entering into contracts with Vehicle Operating Companies (VOC) and external suppliers, as well as the administration of contract payments and subsidies. The Operations branch is responsible for managing the Operations Control Centre and operational contractors such as the VOCs, station management services, retail, advertising and other external supplier contracts.
- The Financial Management Department, which collects fares and revenue, and manages the AFC and APTMS infrastructure.
- The Network management Department, responsible for managing law enforcement services, provided by City Safety and Security, parking management, traffic signals and other services.
- The Regulations Department, responsible for the transformation of the existing public transport industry and Municipal Regulating Entity.
- The Asset and Maintenance Management Department, which procures, manages and maintains assets, including the MyCiTi fleet.
- The Performance and Coordination Department, responsible for communication, marketing, change management, stakeholder management, compliance, performance management and innovation.

9. MyCiTi finances, funding and financial management

Chapter Summary

The 2012 Business Plan identified a range of possible outcomes and the risks related to them. This 2015 Update takes a similar approach, but because of better insights based on actual costs the Update is better able to predict outcomes and thus provide a clearer idea of what is required to ensure financial sustainability of Phase 1 and the N2 Express within the envelope for subsidisation from Council funds (4% of rates) which has been agreed upon, as well as national funding.

It covers most of the same areas as the 2012 Business Plan, but with updated figures.

Achievements

- Funding strategy is based on updated cost modelling results, especially in respect of fare revenues and costs.
- Development of a funding strategy complying with grant frameworks that facilitate MyCiTi Phase 1 and N2 Express operations within the constraint set by Council of contribution to operations from own revenues equivalent to 4% of rates income.
- Driving of the first moderation exercise taking into account financial analysis and early assessment of financial trajectory if moderation is not implemented.
- Development of insights based on a long term operational costs investigation, including the MyCiTi / minibus-taxi hybrid model.

Challenges

- Since 2012 Business Plan the national funding frameworks have changed to restrict the extent to which ancillary operating costs (which excludes narrowly defined direct vehicle operating costs) may be covered by grant funding, from no restriction in 2012 to 50% of costs (and 70% in initial 2 to 3 years) now.
- There are substantial risks inherent in the long term funding framework for MyCiTi (and other similar projects elsewhere in the country), in the sense that a) funding is currently insufficient to permit a metropolitan-wide rollout based on standards required by national government; b) there is a risk of changes to funding frameworks that could at some point have substantial adverse financial impact on the City; c) some costs are difficult to predict over the longer term, such as the fuel price.

Lessons learned and included in this Business Plan Update

- Actual fare revenues are significantly lower than modelled fare revenues as result of key assumptions not materialising and financial strategy has been developed taking this into account. The total recalibration of the system has been undertaken in 2014/15 to take into account this manifestation.
- The fact that a full rollout of MyCiTi services, based on replacement of minibus-

taxis is too expensive, has driven thinking on the need for a hybrid model in which the formal services and informal services co-exist optimally.

- There must be a vigorous attempt to ensure that national government develops clear and robust fiscal architecture to facilitate the development of MyCiTi and similar services throughout the City over the long term.

9.1. Introduction

This chapter summarises the cost and financing of Phase 1 and the N2 Express of the MyCiTi system. While costs include both the costs of designing, building and implementing the system as well as running it, the emphasis of this chapter is on the ongoing, recurrent costs of running the system. Design, build and implementation costs have and are being covered almost entirely from national grant funding, and the risks associated with this are small, especially given that infrastructure is largely built, implementation is largely complete and funding is secured. However the financing of ongoing operations is from a combination of fare and other system revenue, national grants and the City's own general revenues, including local property tax. Operating costs and revenues are much more uncertain, entail ongoing commitments, and have substantial risks associated with them, which need to be understood and managed.

9.1.1. Summary of costs and sources of finances

From a financial perspective, the broad cost components to Phase 1 and the N2 Express could be distinguished as follows:

- The costs arising from designing and planning, building and implementing the system, including compensation of existing operators. These are grouped together since they are once-off costs, although in accounting terms they include both capital and operating costs.
- The cost of the key contracted service providers for running public transport operations, including vehicle operating companies (VOCs), the station services contractor, the control centre and the fare collector. These are all recurrent operating costs paid to external service providers.
- The cost of managing MyCiTi operations within TCT, as well as the associated marketing costs. These are also operating costs that are directly related to MyCiTi operations, but are incurred within the municipality rather than paid out to an external service provider.
- Further related City costs; these are also operating costs incurred internally, but not dedicated to MyCiTi alone. In this chapter these costs have been separated into
    - The cost of law enforcement and related network services. These services relate not only to security on the MyCiTi system, but also to the security and regulation of the environment within which MyCiTi operates, including the

management of minibus-taxis within the area of MyCiTi operations. These costs are shown separately because of their increasing significance.

- Other City costs. This includes costs that are related to improvement of general municipal services in areas serviced by MyCiTi, which have some benefit to the MyCiTi service. They have in the past included items such as additional street lighting, landscaping and cleansing along the route although increasingly, where amounts are small, they are absorbed under the budgets of other departments.

The main sources of funding are:

- System revenue, including fares, advertising and retail-related revenues;
- National government's Public Transport Network Grant (PTNG[7]);
- A portion of National government's Public Transport Operating Grant (PTOG) as determined in this Phase 1 contracts, which can only be sourced upon assignment of the Contracting Authority function; and
- The City's own contributions, mainly for the funding of associated operating costs.

9.2. Structure of chapter

In this chapter the once-off costs of planning, designing, building and implementing the system are presented first, indicating briefly how they are funded from grant revenues. However, a more detailed discussion of grant funding is provided later in the chapter in a consolidated discussion on revenue sources.

This is followed by a description of the components of operating costs and sources of revenue. These are recurrent costs and thus need to be funded on an ongoing basis.

A summary of operating costs and revenues over the medium term is then presented. This summary is based on actual experience of the roll-out of key routes beginning in November 2013 (when the long-term VOC contracts for Phase 1 commenced). It incorporates the results of a detailed process of reassessing predicted revenues and costs linked to actuals. It also reflects these components as affected by the first comprehensive moderation exercise, where services were adjusted to better align revealed passenger demand and services, and explained in detail in Chapter 4.

The Chapter elaborates on proposals for reasonable increases in revenues and containment of costs such that Council's operating subsidy for Phase 1 and the N2 Express can be

[7] As explained below, this grant was originally called the Public Transport Infrastructure and Systems Grant (PTISG), was for two years separated into a Public Transport Infrastructure Grant (PTIG) and a Public Transport Network Operating Grant (PTNOG), but according to the 2015 Division of Revenue Bill, is to be amalgamated once again into a single grant known as the Public Transport Network Grant (PTNG).

contained at 4% of property tax revenue. These measures are to be accompanied by an application for limited exemption from some restrictions contained in the grant framework in order to provide a safety net by permitting a somewhat higher contribution from the PTNG to subsidise operating costs, although the emphasis to ensure that costs are reduced or system income is increased to break even, taking into account subsidies as provided through the current funding framework. It also highlights the financial issues outstanding and proposed interventions.

Inflation and cost estimation

The capital figures are shown in current Rands. That is the value in Rands at the time when payment was made or is predicted to be made. However, the discussion on operating costs is shown in constant (July 2014) Rands in this chapter, with the escalated figures in current Rands provided either also in the main body of the chapter or, where this becomes too unwieldy, in Annexure E. The use of constant (2014) Rands in this chapter to explain operating costs is to facilitate comparison across years, excluding the impact of inflation, showing the impact of further expansion of Phase 1 and the N2 Express as the final milestones are concluded.

9.3. Value added tax (VAT)

Public transport is defined as 'VAT exempt' rather than 'zero-rated'. This means that while the end consumer is not charged VAT on using the service, VAT on inputs for providing the service needs to be paid.

This results in an increase in the cost of providing infrastructure for MyCiTi compared to zero rating or the charging of normal VAT.

National Treasury acknowledges that there are anomalies that have to be addressed, and initiated a process to investigate the matter. However, this process appears not to have progressed far.

9.4. Design, build and implementation costs and financing

Summary of costs

Table 9-1, Table 9-2 and Table 9-3 show the past, present and future estimated infrastructure, vehicle and compensation costs of Phase 1 and the N2 Express. Other than a portion of Phase 2A planning costs, Phase 2 costs are excluded since this Update does not deal with Phase 2 and will be the subject of a separate business plan.

While some of these costs are classified as operating costs, they are all once-off costs funded by national government's previous PTISG and its successors, the PTIG, and (from 2015/16) the network infrastructure component of the PTNG. Compensation, which was

funded between 2013/14 and 2014/15 by PTNOG, is also included here because it was paid as a once-off lump sum amount – although accounted for as part of the network operating component.

It should be noted that some of the staff responsible for the planning, design and implementation of infrastructure have been included in these costs on the basis that once the system is implemented, the need for these functions would be very limited. It should also be noted that included in the TCT department's costs are substantial Council costs for support services. Given the mechanism by which City overhead costs are distributed across line departments, the directorates responsible for MyCiTi attract high support costs.

PHASE 1: Element R 000's	**2006-2013**	**2013/14**	**2014/15**	**2015/16**	**2016/17**	**TOTAL**
Roadway civil works	1 550 421	267 931	45 328	0	0	1 863 680
Depots	219 172	39 920	4 614	0	0	263 706
Stations & stops	300 537	110 944	106 849	32 000	0	550 331
Transport management centre	60 000	0	0	0	0	60 000
Land	252 350	0	0	0	0	252 350
NMT	22 892	0	0	0	0	22 892
Contingency	0	0	0	0	0	0
Escalation	0	0	0	0	0	0
Sundry	28 716	0	0	0	0	28 716
APTMS	159 544	12 220	38 348	9 380	0	219 491
Fare system	241 194	123 738	36 911	12 735	0	414 578
Vehicles	650 916	115 970	269 003	0	0	1 035 890
Compensation	672 109	0	0	0	0	672 109
Sub-Total	**4 157 851**	**670 724**	**501 053**	**54 115**	**0**	**5 383 743**

Table 9-1: Infrastructure, vehicle and compensation costs (including VAT) for Phase 1

N2 Express: Element R 000's	2006-2013	2013/14	2014/15	2015/16	2016/17	TOTAL
Roadway civil works	0	0	0	0	0	0
Depots	0	750	0	0	0	750
Stations & stops	0	20 237	40 510	0	0	60 747
Transport management centre	0	0	0	0	0	0
Land	0	0	0	0	0	0
NMT	0	0	0	0	0	0
Contingency	0	0	0	160	0	160
Escalation	0	0	0	208	0	208
Sundry	0	0	0	0	0	0
APTMS	0	0	7 496	1 874	0	9 370
Fare system	0	0	17 485	0	0	17 485
Vehicles	0	94 883	80 098	8 825	0	183 806
Compensation	0	80 000	50 000			130 000
Sub-Total	**0**	**195 871**	**195 589**[8]	**11 066**	**0**	**402 526**

TOTAL Ph1 and N2 Express	2006-2013	2013/14	2014/15	2015/16	2016/17	TOTAL
	4 157 851	**866 594**	**696 642**	**65 181**	**0**	**5 786 269**

Table 9-2: Infrastructure, vehicle and compensation costs (including VAT) for N2 Express

[8] This amount includes an additional R50m for compensation as was motivated for subsequent to the submission of the 2015/16 funding application to national government, which will be addressed in a future adjustment budget as required.

Planning and implementation costs are categorised as follows:

	2006-2013	2013/14	2014/15	2015/16	2016/17	TOTAL
Planning	390.22	66.61	80.76	112.55	110.05	760.19
Industry transition (other)	672.10	35.47	19.09	181.35	121.18	1029.19
TOTAL	1062.32	102.08	99.85	293.9	231.23	1789.38

Table 9-3: Planning and transition costs for Phase 1, N2 Express, and Phase 2A

Planning costs include project management, systems planning, business planning, marketing and communication, preliminary and detailed infrastructure design, industry transition facilitation, and AFC and CC planning. The costs included here do include, from 2015/16 onwards, fairly substantial amounts for preliminary and detailed design of Phase 2 infrastructure.

Industry transition costs include N2 Express capacity building, and other industry transition costs, but exclude provision for compensation which is reported in Table 9-1 and Table 9-2.

Funding the design, build and implementation costs

All the costs summarised in the above tables have been covered by grants from national government. From the start of the project until the 2013/14 financial year national funding flowed through a single grant, the PTISG. It was originally intended to be used only for capital planning and infrastructure, system costs and related implementation costs. However, as the scale of associated operating costs became evident, the grant scope was widened by national government to help address these costs. This led in 2013/14 to the splitting of the grant into the PTIG and the PTNOG, with the former intended to be used for design, build and implementation costs, while the latter was intended to support operating costs (other than direct vehicle operating costs, which cannot be paid for out of these two grants). According to the latest Division of Revenue Bill (published towards end February 2015), from 2015/16 the two grants will be again amalgamated into one and called the Public Transport Network Grant, but with a Network Operations Component and a Network Infrastructure Component.

The latest grant framework as published in the 2015 Division of Revenue Bill states that the Network Infrastructure Component of the PTNG may be used for:

- Public transport network infrastructure including dedicated lanes, routes and stops/shelters, stations, depots, signage and information displays, control centres and related information technology, fare systems and vehicles (if DoT approves use of grant funds to purchase vehicles), Non-motorised transport (NMT) infrastructure that supports network integration (e.g. sidewalks, cycleways, cycle storage at stations, etc.)

- Plans and detailed design related to Integrated Public Transport Network (IPTN) infrastructure and operations

The plans which municipalities are required to complete include:

- network operational plans, including universal design access plans,
- business and financial plans (including financial modelling, economic evaluation, and operator transition plans)
- institutional network management plan
- engineering and architectural preliminary and detailed designs
- public transport vehicle and technology plans
- marketing and communication plans.

This grant is discussed further below.

9.5. Recurrent operating cost components

This paragraph describes the recurrent operating cost components. It is followed by a description of revenue sources. The figures themselves are shown below from Table 9-4 to Table 9-10 after the description of the components.

9.5.1. Contracted service providers

The contracted service providers represent the heart of system operations. For Phase 1 the vehicle operator contracts have been negotiated and final long term (12 year) contracts signed by the parties. The fare system (AFC) and station management services contracts have been concluded on the basis of open tenders. For the N2 Express a shorter (three year) interim vehicle operator contract has been signed and used as a basis for estimating costs. The Phase 1 contracts for the fare system (AFC), APTMS (previously referred to as the control centre system) and station management services have been designed to cover the N2 Express as well.

The costs of these components have been calculated on the basis of the tendered and negotiated costs as applicable. However, the negotiated or tendered unit costs are not the only factor that drives total costs – this depends also on the extent of operations run. This is discussed further below.

These contracts, discussed in detail in Chapter 7, are summarised below.

Vehicle operator contracts

Vehicle operator contracts have been negotiated and final costs agreed in the 12 year contracts. Long term contracts for Phase 1 were concluded in August 2013 with three vehicle operating companies, namely Transpeninsula, Kidrogen and Table Bay Rapid Transit (TBRT), and came into operation on 1 November 2013.

A three year interim contract was signed effective from 5 July 2014 with the N2 joint venture constituted out of the Mitchells Plain Regional Taxi Company, the Khayelitsha Regional Taxi Company and Golden Arrow Bus Services (GABS), to provide N2 Express interim services.

In each case the payment to the vehicle operators is structured as follows:

- Fixed costs per month. This cost is fixed and is not dependent on the number of vehicles or kilometres operated.
- Vehicle related costs. This is the rate per peak vehicle multiplied by the required average number of peak vehicles per weekday to operate the schedule, based on the City's calculation of the number of vehicles required.
- Driver related costs. This is the rate per driver multiplied by the number of drivers required as calculated by the City using driver duty scheduling software or a manual methodology achieving the same objective.
- Kilometre related rate. This is the rate per kilometre per vehicle type multiplied by the number of kilometres operated as scheduled by the City.
- In addition, there are certain provisions to cover once off items such as initial depot setup costs, vehicle refurbishment, ISO setup costs, etc., and a limited number of other costs.

The rates are adjusted monthly based on the escalation formula in the contract.

The capital cost of vehicles is not included in these modelled prices, since they are being paid for through national grants.

This pricing structure for vehicle operations was agreed because, while being relatively simple, it reflects actual cost structures better than a simple rate per kilometre. For a bus company, running an additional bus during the peak generally costs significantly more than running an additional off-peak bus, since it usually requires adding to the fleet and the number of drivers required, and also to the maintenance, cleaning and fuelling costs. Additional off-peak services can generally be delivered using available, but otherwise idle, vehicles and (to some extent) drivers.

Since it is the City that decides on the scheduling of buses, based on how it seeks to address customer demands, it is appropriate that the City bears the cost implications of the decisions it makes.

This pricing structure incentivises the City to find strategies to smooth demand during the day, bolstering off-peak demand in relation to the peak. While difficult to achieve, it is the City that is ultimately best placed to do so; vehicle operators have very limited ability to alter travel demand patterns. By having a pricing structure that reflects real economic costs the City is incentivised to adopt approaches that lead to more efficient travel patterns and ultimately a more efficient urban economy, which is of benefit to all.

If these risks are moved onto the VOCs, they will be costed in even if the risks do not materialise.

Automated fare collection system

The details of the automated fare collection system (AFC) are described in paragraph 7.4. The tender for the fare system has been awarded and is currently being implemented, with most elements of the fare system now operational. The operational costs reflected in this model relate to costs of managing the system, including operations, maintenance and the provision of spares and replacement of parts. The capital costs have been indicated separately above. The cost of selling and loading cards at stations is included in the station management contract.

It should be noted that the fare system is intended to serve the full MyCiTi system and indeed be extended in future to the current Golden Arrow services and eventually Metrorail. While there will obviously be significant costs associated with such rollouts a substantial amount of the work done in creating the platform for Phase 1 and the N2 Express will not have to be repeated.

On the other hand, it is anticipated that further costs may be incurred in the coming period, not provided for here, but necessary to build and maintain the fare system for current and future phases. This includes potentially contracting a **my**connect retail network management service provider (subject to further investigation) as well as the costs of replacing expired cards. This cost will be provided for in the budget related to the contracting authority function, once this function is assigned.

Automated Public Transport Management System (APTMS)

The details of the APTMS infrastructure and technology (previously referred to as the control centre implementation) are described in Chapter 7. The operational costs relate to the management of the system, personnel costs, and system software and hardware maintenance as calculated in the contract. As discussed, there have been challenges in the delivery of APTMS due to the contract with the previous contractor being terminated, and delays in the procurement of the replacement contractor. Since the replacement tender has not yet been awarded, the APTMS costs are currently only estimations.

Station management

The details of the station management services are described in Chapter 7. In summary, the station management services include the security at the stations, the cleaning of stations, landscaping around the stations, passenger management, and cashiers for fare collection.

The costs for the station services are calculated based on the tendered contract costs.

9.5.2. System costs – managing the operators and marketing the system

Operations management services

These are the services within TCT responsible for managing MyCiTi operations. Previously, the management of MyCiTi as a stand-alone project enabled management costs associated with MyCiTi to be relatively easily identified – namely those that fell within the operations branch of the previous IRT Operations Department. Since the 2012 Business Plan the new institutional structure of TCT has been implemented. Under the new structure responsibility for MyCiTi is distributed over a larger number of directors and managers, most of whom also have responsibilities other than MyCiTi (see Chapter 8). The coordination of MyCiTi is discussed in Chapter 7. A process is underway which seeks to systematically attribute appropriate portions of various personnel and other costs to MyCiTi, but this is not yet complete. The cost estimate provided here is thus based on experience prior to the re-organisation into TCT.

The institutional costs, consisting of the costs of MyCiTi operations management and costs of marketing and promoting the system, and performed essentially by the City administration, are shown separately from those of the four contracted services which constitute actual operations.

There is discussion as to the possibility of contracting an external VOC monitoring service provider as a more efficient and cost effective way of monitoring MyCiTi processes, ensuring VOC compliance with service requirements and management of penalties. These costs have not been included in the tables below.

Marketing and communication

Marketing and communication of the services is seen as a key ingredient for success, and is thus shown separately. The figure has been set relatively high on the basis that marketing is especially important in the initial period of the implementation and running of the system.

9.5.3. Law enforcement and network management

This includes all security, law enforcement and other security related network management functions. It includes personnel and other costs for

- Camera based monitoring of BRT routes and stations;
- Security in the system;
- Revenue protection (i.e. enforcement of fare rules); and
- On-street enforcement of operating licences and obstruction of public transport lanes and stops

With the challenges that have been encountered in removing minibus-taxis operating illegally on MyCiTi routes, as well as new initiatives which are aimed at developing a 'hybrid'

model, whereby taxis are permitted to operate within the broad MyCiTi footprint (see 10.1.6) where they supplement and support MyCiTi (subject to strict limitations), there is a need for much better enforcement capabilities. This includes systems for monitoring minibus-taxi movements (via the TCT Regulations Department) as well as additional enforcement personnel.

There is not necessarily a clear distinction between enforcement for MyCiTi and wider enforcement in the public transport sector. It could be argued that some of the items included here are not MyCiTi functions; however, on balance, it is considered prudent to include them here.

The possibility of implementing ticket inspection services through a new enforcement contractor is under discussion but not provided for in the figures in the following tables.

9.5.4. Other City expenses

There is a collection of other expenses which have arisen as a result of the introduction of MyCiTi, but are either only peripherally related to MyCiTi, or are performed by other departments. Previously this included expenditure on cleansing, landscaping and street lighting along the route. In line with the Council decision of October 2012 these services, which do not represent substantial costs, are now for the most paid for from the budgets of the respective line functions – although some line departments have not yet fully incorporated such costs.

There are though still some expenses which are recorded under this item, especially where this appropriately relates to MyCiTi operating costs. The most significant item is insurance which is covered through the City's own insurance mechanisms.

9.6. Analysis of national grant sources

As indicated the two national grant sources available for funding various components of MyCiTi are PTNG and a small portion of PTOG, as determined in contract negotiations.

As from 2015 the PTNG replaces the PTIG and PTNOG, which, in turn replaced the original PTISG.[9] As indicated above, the PTNG has both a Network Infrastructure Component and a Network Operations Component.

The PTISG was originally established to fund transport investment for the FIFA World Cup and subsequently repositioned to fund national government's Public Transport Strategy and Action Plan agreed by Cabinet in 2007. The PTISG and its successors have focussed in particular on funding Integrated Rapid Public Transport Networks (IRPTNs), and designed largely to fund bus rapid transit projects. Rail is funded through different mechanisms.

[9] As per the Division of Revenue Bill, published on 25 February 2015.

The purposes for which the Network Infrastructure Component of the PTNG can be used have been noted, and the full grant conditions is contained in the latest Division of Revenue Bill (DORB) published in February 2015.

The Network Operations Component of the PTNG contributes towards the operating costs of the additional, ancillary services and provides for vehicle financing and compensation for existing operators whose licences are surrendered. The Division of Revenue Bill (DORB) grant framework for this component reads as follows:

> "Operating subsidies from this component can fund security, station management, fare collection services, control centre operations, information and marketing, network management, insurance, compensation for the economic rights of existing operators and maintenance of infrastructure and systems"

A further clause reads

> "From the start of operations on a route the grant can fund a portion of the per kilometre rate to subsidise up to 100 per cent of the capital cost (including interest and related fees) of vehicles purchased by the vehicle operating company."

However, given that the vehicles for Phase 1 and the N2 Express were earlier paid in full from this grant's predecessors, this clause is not relevant at this stage.

In terms of the 2015 draft grant framework (as has been the case regarding the predecessor grants) the PTNG may not be used for subsidising what are referred to as 'direct vehicle operating costs'. However these costs can be partly funded using the PTOG – although practically this can happen only once the contracting function regarding such funding has been assigned by the City. For a number of years the relevant framework (PTISG, PTNOG and now PTNG) has included the following condition:

> "From the start of operations, IPTN systems must recover all the direct operating costs of contracted vehicle operators from fare revenue, other local funding sources and, if applicable, from any Public Transport Operations Grant (PTOG) contributions. These direct operating costs consist of fuel, labour, operator administration and vehicle maintenance."

The PTOG is the grant source for the legacy subsidised bus services, management of which is currently assigned to the provincial government. In line with national government policy and the provisions of the NLTA, the City has applied for the assignment of the contracting authority function. Given that only the Minister of Transport has still to agree to the assignment, with all other relevant parties already having done so, this has been expected to come into effect from May 2015, enabling TCT to align the subsidised bus services into an integrated service. However it appears that achieving final agreement from the Minister of Transport may take longer.

During the process of Council agreeing to the long term contracts for Phase 1 the matter of allocating some of the PTOG funds was negotiated and it was agreed that the amount that could be re-assigned from PTOG for funding the legacy services to MyCiTi in Phase 1 was

R35 million in 2013/14, escalated to correspond with the timing of the actual re-assignment. The escalated figures are contained in the relevant table below.

Not only may PTNG not be used for funding direct vehicle operating costs, but the extent to which it may fund ancillary costs is also restricted by the grant framework, as has been the case since the 2013/14 PTNOG grant. As has been the case for the previous two years, the 2015 PTNG framework reads as follows:

> "The network operations component can be used in each Phase and Sub-Phase of the introduction of services to fund up to 70 per cent of any deficit relating to operating costs (but not direct operating costs) for two years after the municipal financial year in which operations start. Thereafter the Grant can fund up to 50 per cent
>
> Compensation for the economic rights of existing operators and interest payments for bus vehicles financed from the PTI Grant can be funded up to 100 per cent in each phase."

The following table shows the amounts that have been received in PTISG funding so far, as well as amounts already provided for in the Division of Revenue Bill (DORB) of 2015 for 2015/16 to 2017/18. For the period 2013/14 to 2014/15 these are separated into the PTIG and the PTNOG, and then combined again into the PTNG. The columns on the left show the funds allocated by national government in each year. The column on the right shows the unspent portion at the end of each year, which was then rolled over into the following year.

Amounts will be shown as unspent by the City until they are actually paid for services rendered. Thus a construction project, or the process of purchasing vehicles, can be partially completed and committed but the money provided for completion shown as unspent. In 2013/14 an agreement was reached with City Corporate Finance to pay for the vehicle chassis all of which had been delivered in preparation for the body building of the buses. All buses currently on order will be delivered prior to the end of the 2014/15 financial year.

	PTISG funding and expenditure profile (R millions)						
Financial year	**Funding**			**Cumula-tive Funding**	**Expenditure**	**Cumulative Expenditure**	**Net effect funding (balance)**
2005/6			8.0	8.0	0.0	0.0	8.0
2006/7			120.0	128.0	65.2	65.2	62.8
2007/8			336.2	464.2	36.0	101.2	363.0
2008/9			318.6	782.8	330.4	431.6	351.3
2009/10			882.5	1 665.3	816.7	1 248.2	417.1
2010/11			468.4	2 133.7	520.6	1 768.8	364.9
2011/12			1 608.3	3 742.0	930.0	2 698.9	1 043.1
2012/13			1 348.7	5 090.7	2 195.1	4 894.0	196.7
	PTIG	**PTNOG**	**Total**				
2013/14	946.2	352.5	1 298.7	6 389.4	1 058.93	5 952.9	436.5
2014/15	1 159.1	217.5	1 376.6	7 766.0	n/a	n/a	n/a
	PTNG Infrastructure Component	**PTNG Operations Component**					
2015/16	865.5	228.0	1 093.5	8 859.5	n/a	n/a	n/a
2016/17	869.2	229.5	1 098.7	9 958.2	n/a	n/a	n/a
2017/18	901.8	241.0	1 142.7	11 100.9	n/a	n/a	n/a

Table 9-3: PTISG/PTIG/PTNOG/PTNG funding past and confirmed future

Note that the above figures include total grant funding for the relevant year, including funding for the Infrastructure Component for Phase 2. A minor portion of the Infrastructure Component from years 2015/16 will be spent on Phase 1 and the N2 Express.

As indicated above, the full capital costs as shown in the tables at the start of the chapter will be funded by the PTISG and its successors. To the extent that these sources fall short of capital requirements, implementation can be slowed or, if funds are received more quickly, it may be possible to accelerate implementation. However, the lead time involved in building infrastructure or purchasing vehicles means that acceleration is not always feasible.

The funds already made available in terms of the 2014 DORA were sufficient to complete the capital investments for Phase 1 and the N2 Express and start to provide funding for capital expenditure for Phase 2. The revisions contained in the 2015 Division of Revenue Bill do not alter this.

While the three-year national budget generally gives a good indication of future grant funding, it is not legally binding on national government. It has been recognised that MyCiTi and other BRT projects need greater funding certainty because of the long lead times in projects of this nature. A section was introduced into the Division of Revenue Act of 2010 to address this (referred to as 'enforcement' of the indicative funds allocation) and has been

carried through to each subsequent DORA. Section 8(3) in the 2015 Division of Revenue Bill says:

> "8(3) If approved by the National Treasury after consultation with the national Department of Transport, allocations for specific transport contracts for capital projects from the envisaged conditional allocations for the Public Transport Network Grant listed in Column B of Part B of Schedule 5, may not be altered downwards in the Division of Revenue Acts for the 2016/17 financial year and 2017/18 financial year."

This is the only grant for which a specific provision of this nature has been made in the Division of Revenue Act, and makes it possible to advertise and award tenders before funds are actually received by the City. Currently it is not possible to obtain longer term certainty on grants, although the City has raised its concern about this with national government.

To improve levels of certainly, the City should apply for the enforcement of allocation of funds in the outer years of DORA in terms of this provision.

9.6.1. Operating grant conditions

When the 2012 Business Plan was drawn up the framework conditions of the then PTISG did not place the restriction on funding of ancillary costs at a maximum of 70% for the first two years and 50% thereafter.

In response, and recognising that the key risks lie in the covering of the vehicle operating costs, the City proposed that grant funding should be used to cover 50% of the combined vehicle operating costs and ancillary costs up to a level that represented 100% of all ancillary costs, while the City would commit to a maximum of 4% of its property rates income for the public transport system as a whole.

As is evident from the discussion above, the grant frameworks were changed to clarify the proportion of operating costs that can be funded from PTNG, but in a manner which was more restrictive than the City's proposal. As is explained below, the combination of costs, fare revenue and the latest grant structure as contained in Division of Revenue Bill 2015 results in the City being required to contribute more than 4% of rates to run only the services of Phase 1 and the N2 Express, unless changes are affected.

In its latest funding application the City requested that the framework conditions be adjusted to make the system financially viable within the 4% rates cap, but despite the amalgamation of the grants into a single PTNG the conditions as contained in the two previous years restricting the extent to which operations can be funded remain unchanged. This is discussed further below. This is a matter of fundamental importance requiring close attention and engagement with national government – especially as a safety net when deficits increase due to factors beyond the control of the City.

9.7. Property rates and other municipal tax sources

The City's two main sources of general revenue are property rates and a share of the nationally collected fuel levy. In the budget for the 2014/15 financial year, the estimate for these revenue sources is as follows:

Property rates	R5 931 million
Share of nationally collected fuel levy allocated to the City	R2 003 million

Thus in 2014/15, R59.3 million represented 1% of property rates income and R79.3 million represented 1% of these sources combined.

As indicated, in 2012 Council agreed that it would be prepared, and could at most afford, to contribute up to the equivalent of 4% of property rates income to MyCiTi operating costs. This translates into approximately R237 million in the 2014/15 financial year.

9.8. Recurrent costs and funding

The following tables show the full recurrent costs and funding basis for the coming three fiscal years for Phase 1 and the N2 Express separately and combined. The figures are shown in 2014 Rands. The same figures, but now including escalation, are shown in Annexure E.

The revenue stated below assumes that the factors as described in para 5.2.7 have been addressed and managed, and also assumes that the effect of moderation will have a minimal impact on revenue collection. It also assumes pro-active marketing drive supported by an improved service delivery to attract potential passengers.

The costs assume the successful implementation of the operating decisions taken based on the moderation exercise described in paragraph 4.6.

Following the summary of costs a funding scenario is provided based on the current grant framework as described above, where the PTNG is set at 70% of ancillary costs for the first year of introduction of each sub-phase and the subsequent two years, and 50% thereafter. These figures are shown first in unescalated rands, followed by a table providing the same figures in escalated rands.

In both cases the ceiling of 4% of rates funding is shown and the excess of deficit funding required above the 4% level.

Note that for the escalated figures shown in Annexure E escalation has been calculated differentially across the different cost components. Many categories of costs are escalated at an assumed inflation rate of 6.5%. However vehicle operating costs have typically escalated more than this. There is an escalation formula in the contract agreed with the vehicle operator companies which is based on a number of different components, linked to factors

such as increases in fuel price and regulated labour rates. Applying projected escalation rates to these components an escalation rate for the core vehicle operations in the range of 7% to 9% for the various components has been assumed. It should be noted however that there are some costs agreed in the long term contracts applicable in the initial years which are not escalated. As a result the annual escalation of the total figure payable to vehicle operators is lower in the initial period, in some cases closer to 4%.

The fare policy assumes an increase in fares each year in line with the increase in core vehicle operator costs. Because of time lags this typically would result in a slightly lower escalation rate. 8% has been assumed in the projections below. The significantly higher fare increases proposed in the tariffs for the 2015/16 financial year are not reflected in these tables.

Property rates have been assumed to increase at 6.5%, not taking into account real growth in the property tax base.

Costs of Phase 1 and N2 Express 2014 Rands

The costs of these different phases are reflected in the following tables.

PHASE 1 R 000's 2014 Rands	2015/16	2016/17	2017/18
	PHASE 1	PHASE 1	PHASE 1
SYSTEM REVENUE	**244 836**	**247 836**	**247 836**
Fare revenue	211 150	214 150	214 150
Advertising	12 023	12 023	12 023
Fare revenue due to removal of illegal taxi, and other revenue	21 663	21 663	21 663
SYSTEM COSTS	**635 283**	**641 700**	**636 575**
Contracted Services	**503 556**	**509 973**	**504 849**
VO contracts	376 880	375 860	369 211
APTMS operations	12 051	12 051	12 051
Fare system operations	23 067	20 798	22 323
Station services	91 558	101 264	101 264
Operations Service & Marketing	**77 000**	**77 000**	**77 000**
Operations Management Service	59 000	59 000	59 000
Marketing & communication	18 000	18 000	18 000
Law enforcement services	**36 535**	**36 535**	**36 535**
Law enforcement(current & additional enforcement re minibus-taxis)	21 735	21 735	21 735
Security SSU	13 300	13 300	13 300
Minibus-taxi monitoring	1 500	1 500	1 500
Other City Costs	**18 191**	**18 191**	**18 191**
Insurance	16 494	16 494	16 494
Major maintenance	1 598	1 598	1 598
Transport information	100	100	100
Deficit before funding: System revenue minus System costs	**-390 447**	**-393 864**	**-388 739**

Table 9-4: Phase 1 costs in 2014 Rands

N2 EXPRESS R 000's 2014 Rands	2015/16	2016/17	2017/18
	N2 EXPRESS	N2 EXPRESS	N2 EXPRESS
SYSTEM REVENUE	**24 000**	**25 000**	**25 000**
Fare revenue	24 000	25 000	25 000
Advertising	0	0	0
Fare revenue due to removal of illegal taxi, and other revenue	0	0	0
SYSTEM COSTS	**108 580**	**108 273**	**108 479**
Contracted Services	**78 211**	**77 904**	**78 110**
VO contracts	72 265	72 265	72 265
APTMS operations	1 629	1 629	1 629
Fare system operations	3 117	2 811	3 017
Station services	1 200	1 200	1 200
Operations Service & Marketing	**6 000**	**6 000**	**6 000**
Operations Management Service	0	0	0
Marketing and communication	6 000	6 000	6 000
Law enforcement services	**21 735**	**21 735**	**21 735**
Law enforcement (current & additional enforcement re minibus-taxis)	21 735	21 735	21 735
Security SSU	0	0	0
Minibus-taxi monitoring	0	0	0
Other City Costs	**2 634**	**2 634**	**2 634**
Insurance	2 408	2 408	2 408
Major maintenance	213	213	213
Transport information	13	13	13
Deficit before funding: system revenue minus system costs	**-84 580**	**-83 273**	**-83 479**

Table 9-5: N2 Express costs in 2014 Rands

PHASE 1 + N2 EXPRESS R 000's 2014 Rands	2015/16 TOTAL	2016/17 TOTAL	2017/18 TOTAL
SYSTEM REVENUE	**268 836**	**272 836**	**272 836**
Fare revenue	235 150	239 150	239 150
Advertising	12 023	12 023	12 023
Fare revenue due to removal of illegal taxi, and other revenue	21 663	21 663	21 663
SYSTEM COSTS	**743 862**	**749 973**	**745 055**
Contracted Services	**581 767**	**587 877**	**582 959**
VO contracts	449 145	448 125	441 476
APTMS operations	13 680	13 680	13 680
Fare system operations	26 184	23 609	25 339
Station services	92 758	102 464	102 464
Operations Service & Marketing	**83 000**	**83 000**	**83 000**
Operations Management Service	59 000	59 000	59 000
Marketing & communication	24 000	24 000	24 000
Law enforcement services	**58 270**	**58 270**	**58 270**
Law enforcement (current & additional enforcement re minibus-taxis)	43 470	43 470	43 470
Security SSU	13 300	13 300	13 300
Minibus-taxi monitoring	1 500	1 500	1 500
Other City Costs	**20 826**	**20 826**	**20 826**
Insurance	18 902	18 902	18 902
Major maintenance	1 811	1 811	1 811
Transport information	113	113	113
Deficit before funding: System revenue minus system costs	**-475 027**	**-477 137**	**-472 219**

Table 9-6: Combined Phase 1 and N2 Express costs in 2014 Rands

Table 9-7 and Table 9-8 show the funding of the combined Phase 1 and N2 Express under the current grant framework, as contained in the 2015 Division of Revenue Bill for real and escalated rands. In terms of this framework national government contributes PTNG equivalent to 70% of ancillary costs for the first two years and 50% thereafter. It also assumes both that PTOG funding is received as anticipated, as well as the successful implementation of the operational decisions flowing from the moderation exercise.

The figures in the following table are all in 2014 Rands, with no escalation or growth included.

	2015/16	2016/17	2017/18
Deficit before funding (System revenue - system costs)	**-475 027**	**-477 137**	**-472 219**
PTNG: Operations Component [70% - 50% of ancillary]*	206 302	150 924	151 789
PTOG (re-assigned or funded from PTNG)**	37 275	37 275	37 275
City rates contribution set at 4% of rates[10]	237 701	237 701	237 701
Remaining unfunded deficit	0	-51 238	-45 454

Table 9-7: Funding based on existing grant framework conditions (constant 2014 Rands)

** The 2015 Division of Revenue Bill (DORB) provides sufficient funding allocation for the projected operational component of PTNG.*

*** Assumed that PTOG is re-assigned from 2015/16 onwards and, if not, that it is to be funded from PTNG.*

As indicated, the escalated figures are shown in Annexure E. However, for ease of reference, a summarised escalated version of this table is provided here since the escalated version was used in the funding application submitted in 2014 to national government for future inner and outer years and has generally been used recently in discussion around the funding of deficits.

[10] See footnote 11

	2015/16	2016/17	2017/18
Deficit before funding (System revenue - system costs)	**-504 295**	**-533 582**	**-569 308**
PTNG: Operations Component [70% - 50% of ancillary]*	219 690	166 132	178 901
PTOG (re-assigned or funded from PTNG)*	39 698	42 278	45 026
City rates contribution set at 4% of rates[11]	251 543	269 492	288 357
Remaining unfunded deficit	0	-55 680	-57 023

Table 9-8: Funding based on existing grant framework conditions (escalated Rands)

** See notes to Table 9-7*

It should be noted that predicted figures are derived based on the assumptions that have been made which may or may not turn out to be correct. Costs and revenues need to be monitored, managed and adjusted continually to ensure positive outcomes more or less in line with – or better than – predictions.

As noted the City has resolved that it will contribute up to 4% of property rates towards funding the MyCiTi system.

For the 2015/16 year it is forecast that the deficit will be close to 4% of rates after taking into account the PTNG funding. However, during this year much of the PTNG funding is calculated at 70% of ancillary costs. Because the bulk of roll-out occurred in 2013/14, by 2016/17 this will have fallen to 50% of ancillary costs and the deficit to be covered by rates increases concomitantly in that year.

Note that no growth in rates has been assumed. If real growth in the City's rates base of 3% per annum is assumed, the additional amount in 2015/16 is R7.1 million, which results in the deficit in that year being a little further beneath the 4% limit. However, even with this growth assumption the deficit in excess of 4% of rates remains at R49 million in 2016/17 and R36 million in 2017/18.

9.9. Strategies to address the deficit

As shown above, it is projected that there will remain a deficit which, if paid for by the City from its own funds, would require a City contribution of more than 4% of property rates. This will not be in compliance with current approvals and would not be sustainable for the City. There are a few mechanisms for bringing the City contribution to 4% of property rates,

[11] Numbers calculated based on 4% of projected rates income as provided by Corporate Finance, and does not necessarily reflect in the budget for the relevant year.

the maximum exposure approved by way of the 2012 Council decision. These include the following strategies to reduce operational costs:

Strategy 1: Implementing the five-pronged strategy to reduce projected operational costs and improve revenue.

Strategy 2: Engaging with National government to change the PTNG framework formula to widen the definition of ancillary operating costs, or to provide an exemption from the formula's constraints to increase the contribution to ancillary operating costs, noting that this will reduce the amount of capital available for Phase 2 rollout and operational subsidy.

Strategy 3: More aggressive moderation, which will result in a significant reduction in the quality of the service and is likely to compromise the integrity of MyCiTi as an alternative mode to choice users. This will result in a loss of passengers, with concomitant impacts on revenue collection. It is therefore not recommended.

Strategies 1 and 2 are further explained below.

9.9.1. Strategy 1: Implementing the five-pronged strategy to reduce projected operational costs and increase revenue

The detail regarding Strategy 1 is as follows, with the detailed discussed below:

Mechanism 1: Evaluating which components of operating costs can be considered to be ancillary in terms of the grant funding framework conditions.

Mechanism 2: Increasing fare income.

Mechanism 3: Reducing vehicle operator rates.

Mechanism 4: Further moderation, without compromising service quality.

Mechanism 5: Improving the passenger demand profile.

Mechanism 1: Evaluating which components of operating costs can be considered to be ancillary in terms of the grant funding framework conditions

Additional operational subsidy from the PTNG could be achieved by applying the PTNG framework in such a manner that the relevant cost elements which currently are treated as costs regarding direct vehicle operations are assessed strictly as against the wording of the PTNG framework. Where the wording of the framework permits it, these will be considered as *ancillary costs* and thus capable of being subsidised through this grant. For example: maintenance of depots and security falls outside the PTNG framework's definition of *direct vehicle operations*, but have up to now been accounted to date as VOC costs

Mechanism 2: increase fares

The deficit could also be addressed to some degree by increasing fares.

Recommendations have already been made to increase fare revenues in excess of inflation for 2015/16. The target can be reached if additional fare increases are introduced in 2016/17.

The recommended increases for 2015/16 are based on a general fare increase of 9.08% which applies the VOC escalation rate. In addition the boarding fare will increase by a further 5%, while there would be declining distance based increases as the trip length increases, to reduce the impact on commuters travelling longer distances. Peak fares are further increased, as per Mechanism 5 below.

The increases for 2016/17 obviously need not be structured in the same way.

Mechanism 3: reduced vehicle operator rates

The vehicle operator rate has been negotiated for a 12-year period. Negotiations took place in a context in which vehicle operators had a less urgent imperative to agree to a price than did the City. This weakened the City's position and arguably led to an agreement which is favourable to the operators.

Some scope exists to reduce rates by paying close attention to all possible mechanisms to bring costs down within the current VO contract terms. These mechanisms include:

1. Making VOCs compete on price for new services;
2. Allocate kms to the VOCs with the lowest rates, in-as-far as the contracts allow;
3. Strictly apply the contractual provisions to review fuel consumption rate and reduce the rate for 9m vehicles;
4. Adjust the fuel consumption and maintenance costs of new fleet (in terms of clause 47 of VOC contract) – e.g. regarding the Volvo low floor buses and the Scania high floor buses;
5. Renegotiate maintenance costs after 5 years;
6. Improve management of penalties;
7. Interpret contract more restrictively from a cost point of view;
8. Improve the management of payment for services rendered.

Mechanism 4: further moderation, without compromising service quality

Some further operational savings are feasible.

The 1st round of moderation proposals are still in the process of being implemented. A relatively small additional amount through a 2nd and 3rd round of moderation is recommended as a contribution towards further deficit reduction. These additional measures are not anticipated to significantly reduce service quality and include further route optimisation, application of moderation to phase 1B routes, the proposed night service etc.

Mechanism 5: improved the passenger demand profile

The deficit could also be reduced through an improved demand profile. As indicated under the discussion around increasing fares, a shift in ridership from peak times, where buses are full to off-peak times where there is spare capacity in a manner which enables a reduction in peak vehicles supplied but no increase in off-peak vehicle requirements will help reduce the deficit. While increasing the peak fare is one mechanism that might be considered to achieve this, there are other potential mechanisms, albeit more long term which may be implemented in conjunction. These include campaigns for more flexible work hours and institutional starting times.

Further key mechanisms include improved bi-directional flow and more intensive seat renewal.

Bi-directional flow

Bi-directional flow is the flow of passengers counter to the peak direction, and is achieved where flows in either direction at the same time are similar. Where passenger demand is all in the same direction vehicles have to return empty to the starting point to commence the next trip cycle. Improving the reverse flow increases revenue at no additional cost until ridership is equal in both directions.

Seat renewal

Seat renewal (or seat renovation) is the term given to the process whereby passengers continuously alight and others board along a route. Because fares are not directly proportional to trip distance more passengers making shorter trips earns the system more revenue at no additional cost to the service than fewer passengers making longer trips. The current situation involves a seat (or space) being taken at the start of trip and occupied for the entire length of the journey.

Improved land use patterns

Improved demand patterns are ultimately driven by improved land use patterns. Where there is mixed development along a route, leading to people travelling shorter distances in both directions between origin and destination more evenly through the day, the system's finances will be dramatically improved.

The solution is not so much higher density, but density in the right place. High density residential development set far from high density commercial development can exacerbate financial losses since it leads to the adverse demand conditions described earlier.

Measures to achieve Travel Demand Management (TDM) and Transit Oriented Development (TOD) outcomes to support MyCiTi are discussed in more detail in chapter 4.5 on pages 44 and 46 respectively.

It is important that the City prioritises measures to improve the passenger demand profile over the medium – long term through adopting a pro-TDM and pro-TOD policy approach and

developing supporting tools and mechanisms to achieve these outcomes. It is critically important that key decisions around public investment, housing and major development applications reflect these desired policy outcomes, and thus future development patterns reduce the operational costs of providing high quality public transport.

Ultimately, the key to a cost effective public transport system lies here.

9.9.2. Strategy 2: Engage with National government to change to the PTNG framework conditions

As indicated, when the 2012 Business Plan was drawn up the DORA framework for the then PTISG did not place any restrictions on funding of ancillary costs; although the conditions stated that direct vehicle operating costs were to be covered "from fare revenue, other local funding sources and, if applicable, from any Public Transport Operations Grant contributions".

The MyCiTi service is clearly very different from the pre-existing services. Not only is the quality of service better, including level boarding and universal access, but there is a substantial commitment to providing off-peak services well into the evening and over weekends. This is in line with national government's Public Transport Strategy and Action Plan, the key components of which have been summarised by the NDoT thus:

- 85% of all residents within 1km of Rapid PT Network by 2020;
- Upgraded modal fleet, facilities, stops and stations;
- Extended hours of operations (16-24 hours);
- Peak frequencies (5-10 minutes) – off-peak frequencies (10-30 minutes);
- Full special needs and wheelchair access;
- Safe and secure operations monitored by a control centre;
- Electronic fare integration when making transfers;
- Integrated feeder services including walking, cycling and taxi networks;
- Integration with metered taxi services and long distance intercity services; and
- Car competitive public transport options enabling strict peak period car use management.

The current funding framework in essence assumes that these increased standards can be covered through a grant equivalent only to 50% of ancillary costs. Ostensibly, the expectation of national government was that the increased efficiencies arising from quicker cycle times, in turn achieved by dedicated roadways and quicker boarding by using pre-board stations, would be sufficient to finance most of the higher standards.

While this may be the case on specific routes under certain circumstances, in MyCiTi's case this is not achievable for Phase 1 and the N2 Express – and modeling and other evidence indicates that this is also not the case in a wider roll out. The main reason for the disconnect is the urban form of the City, which is mostly a legacy of Apartheid planning.

TCT's proposal as submitted in the 2015/16 funding application was that rather than just fund ancillary costs at 50%, all costs should be subsidized by national government at 50%.

The remainder would be covered by fare and advertising revenue and the City's own tax revenues.

Had this been accepted the City's contribution would have fallen to below 2% of rates. However, this was not agreed to by national. Indeed, no changes in this regard were made to the grant framework.

There is, however, scope to apply for exemptions from the framework. The exemption clause in the 2015 Division of Revenue Bill reads as follows:

> **Exemptions**
>
> **36.** (1) The Minister may, if good grounds exist, approve a departure from a provision of a framework, a regulation made under section 38 or a condition imposed in terms of this Act.
>
> (2) For purposes of subsection (1), good grounds include the fact that the provision of the framework, regulation or condition—
>
> *(a)* cannot be implemented in practice;
>
> *(b)* impede the achievement of any object of this Act; or
>
> *(c)* undermines the financial viability of the affected national or provincial department or municipality.
>
> (3) Any departure approved in terms of subsection (1) must set out the period and conditions of the departure, if any, and must be published by notice in the *Gazette*.

It is therefore recommended that an exemption be applied for on the basis that the 70% funding level is permitted to continue into future years, at least as a safety net if other measures do not deliver the required improvement in the deficit situation. Were this to be applied the deficit would be just under 4% of rates over each of the next three financial years, leaving a small surplus after the 4% contribution as shown in these tables, first in unescalated and then escalated rands:

	2015/16	2016/17	2017/18
Deficit before funding (System revenue - system costs)	**-475 027**	**-477 137**	**-472 219**
PTNG (Operations Component)(based on 70% funding)	206 302	211 294	212 505
PTOG (re-assigned or funded from PTNG)	37 275	37 275	37 275
4% rates – Council funding[12]	237 701	237 701	237 701
Remaining deficit / surplus	6 251	9113	15262

Table 9-9: Funding based on a continuation of 70% funding of ancillary costs (unescalated rands)

[12] See footnote 11

	2015/16	2016/17	2017/18
Deficit before funding (System revenue - system costs)	-504 295	-533 582	-569 308
PTNG (Operations Component) (based on 70% funding)	219 690	232 585	250 462
PTOG (re-assigned or funded from PTNG)	39 698	42 278	45 026
4% rates – Council funding[13]	251 543	269 492	288 357
Remaining deficit / surplus	6 636	10 773	14 537

Table 9-10: Funding based on a continuation of 70% funding of ancillary costs (escalated rands)

The City has previously communicated to national government that it cannot sustain contributions to operating costs in excess of 4% of rates. It can be argued on the basis of clause 36(2)(c) of the Bill that the 70% limit should be continued, rather than reduced to 50%, thereby containing the City's contribution at more or less maximum levels.

The amounts provided for by national government under the Network Operations Component of the PTNG are, in fact almost sufficient already to permit funding to continue at a 70% level, assuming there is no further requirement for funding of compensation for the economic rights of existing operators; such an exemption would require a shift of funds from the Infrastructure to the Operating component amounting to only R3.0 million in 2016/17 and R9.4 million in 2017/18. This projected increase will stabilise (and is likely to decrease based on the strategies described in this chapter) for the Phase 1 and N2 Express service as the service is fully rolled out.

A significant change to the framework conditions published in terms of the 2015 Division of Revenue Bill (DORB) is that a formula is determined to adjust indicative allocations going forward; for 2016/17 (20% of allocation) and 2017/18 (40% of allocation). Whilst this is positive in that a formula will ensure that future allocations will be based on objective statistics and performance, it is important that the City engages with National and lobbies to ensure that the proposed formula gives adequate consideration to the extent, quality, and efficiency of the MyCiTi service, as well as the effectiveness of allocated budget.

9.10. Recommended approach

The main emphasis of the Business Plan is to address the projected deficit actively through **Strategy 1**, with the aim of completely removing the deficit (after applying the 4% rates contribution within the current national funding framework) in a manner that improves cost

[13] See footnote 11

recovery. This will preserve some national funding for both capital and operating subsidy for future roll-outs.

To reduce the projected deficit by approximately R52 million in the 2016/17 financial year the following are the recommended targets (in 2014 rands) regarding potential cost savings and system revenue improvements:

Mechanism	Annual target	Description
1: Evaluating ancillary operating costs in terms of the funding framework conditions.	R4m	Apply the PTNG framework in such a manner that the relevant cost elements which currently are treated as costs regarding direct vehicle operations are assessed strictly as against the wording of the PTNG framework. Where the wording of the framework permits it, consider these costs to be *ancillary costs* and thus capable of being subsidised through this grant. For example: maintenance of depots and security falls outside the PTNG framework's definition of *direct vehicle operations*, but have up to now been accounted to date as VOC costs.
2: Increase Fares	R20m	This is the first of two key mechanisms for addressing the deficit. Recommendations are currently being made to increase fare revenues in excess of inflation for 2015/16. The target can be reached if additional fare increases are introduced in 2016/17. The recommended increases for 2015/16 are based on a general fare increase of 9.08% which applies the VOC escalation rate. In addition the boarding fare will increase by a further 5%, while there would be declining distance based increases as the trip length increases, to reduce the impact on commuters travelling longer distances. Peak fares are further increased, as per Mechanism 5 below. The increases for 2016/17 obviously need not be structured in the same way. The target takes into account that increasing fares will result in some loss in passengers taking into account assumed passenger elasticity.
3: VOC unit costs	R15m	A saving of R15 million represents close to 4% reduction in the unit costs of the service providers. This will require close attention to all possible mechanisms to bring costs down within the current VO contract terms. These mechanisms are contractually in place and include: 1. Making VOCs compete on price for new services; 2. Allocate kms to the VOCs with the lowest rates, in-as-far as

Mechanism	Annual target	Description
		the contracts allow; 3. Strictly apply the contractual provisions to review fuel consumption rate and reduce the rate for 9m vehicles; 4. Adjust the fuel consumption and maintenance costs of new fleet (in terms of clause 47 of VOC contract) – e.g. regarding the Volvo low floor buses and the Scania high floor buses; 5. Renegotiate maintenance costs after 5 years; 6. Improve management of penalties; 7. Interpret contract more restrictively from a cost point of view; 8. Improve the management of payment for services rendered.
4: Further moderation	R8m	The 1st round of moderation proposals are still in the process of being implemented. A relatively small additional amount through a 2nd and 3rd round of moderation is recommended as a contribution towards further deficit reduction. These additional measures are not anticipated to significantly reduce service quality and include further route optimisation, application of moderation to phase 1B routes, the proposed night service etc. etc.
5: Improving passenger demand profiles	R5m	This can be achieved through Travel Demand Management (TDM) measures based on smoothing of peak period travel demand, achieving more bi-directional flow and better seat renewal along routes (the latter two ultimately being driven by land use density/distribution). This target is set for short term deficit reduction. While an improved demand profile is the key to longer term financial viability, these changes are likely to take a long time to implement; thus only a small amount is assumed in terms of this mechanism. Measures to achieve this include: 1. Increasing the peak to off-peak fare differential, starting with the 2015/16 tariff; 2. Decreasing the duration of the peak periods from 2 hrs to 1 hr 15 mins, thereby to make it easier for those who can change the time they start their travel, to reduce their travel cost. 3. Application of moderate peak capping – i.e. providing a smooth service level, rather than accommodating the peak of the peak through continually increasing supply / capacity. 4. Actively marketing off-peak travel to align with the peak capping strategy. 5. Marketing the need for flexitime to employers and employees, to incentivise commuters to travel outside of the peak of the peak.

Mechanism	Annual target	Description
		6. Transit Orientated Development (TOD) measures, which ultimately will result in shorter travel distances, improved bi-directional flow and better seat renewal, among others. While improvements through TOD is only achievable incrementally over the medium to long term, the right type of density along transport corridors, in the correct locations, will ultimately lead to a more cost effective transport service, and need to be treated as a priority to achieve longer term deficit improvements.

Returning to **Strategy 2**, which is aimed at providing a safety net regarding a funding gap that may remain in-as-far as Strategy 1 is not completely successful, or where risks materialise that the City cannot in the short term anticipate or manage. Furthermore, even if an exemption is achieved for one or two years, it may not be achieved on an ongoing basis. It is therefore prudent to pursue other adjustments to contain the deficit within a reasonable time frame.

In terms of the Division of Revenue Bill 2015, the amounts provided for by National government under the Network Operations Component of the PTNG are currently almost sufficient already to permit funding to continue at a 70% level, assuming there is no further requirement for funding of compensation for the economic rights of existing operators. Such an exemption would require a shift of funds from the PTNG Infrastructure to the PTNG Operating Component amounting to only R3.0 million in 2016/17 and R9.4 million in 2017/18.

However it is not within TCT's control. Furthermore, the mechanism for continued implementation will be based on receipt of this funding, and shifting funding from the PTNG Infrastructure Component. The amounts provided for in the Division of Revenue Bill for capital expenditure for future system expansion are significantly less than was applied for. While this will not directly affect Phase 1 and the N2 Express, since there is still sufficient funding for capital costs of these services, it will reduce funding available for Phase 2. Containing the operating cost requirement or increasing revenue through Strategy 1 is therefore essential to mitigate this constraint.

At relatively low levels of switching of funds away from capital the shortfall could be addressed by slowing Phase 2 construction, or the City bridging the capital spend until funds are available, or a combination of the two. However, as the amounts used on operations increases this will become more challenging.

It is recommended that in the event that both the exemption from funding limits is granted and the deficit reduction through other strategies is successful, the Council contribution is maintained at 4% to avoid delaying infrastructure rollout plans.

9.11. Financial risks

The previous paragraph identified deficits based on a set of reasonable assumptions for both costs and revenues. Because the system is now substantially already in operation (although many of the total number of routes are not yet in operation) and estimates are based on actual experience, the accuracy of the forecasting is likely to be much higher than in the 2012 Business Plan. All contracted service providers are now in place except for the APTMS contractor at prices that, whether negotiated or tendered, are now clear. Ridership levels are now much better understood. An intensive moderation exercise has been undertaken that has given substantial new insights into cost and revenue patterns. And as explained at paragraph 4.4, the forecasts are based on significantly lower fare revenue than previously estimated.

9.11.1. Risk of failure to assign PTOG and the Contracting Authority

The one risk that does have a fairly high chance of materialising is a failure of the national Department of Transport to assign the PTOG to the City of Cape Town within the envisaged time frame.

If this is the case the City will have to apply for an exemption to allow the PTOG funding to be made up by a switch from the Network Infrastructure Component to the Network Operating Component. While a request could be submitted for an adjustment to the total PTNG allocation to compensate for this, it is unlikely that this would be granted.

On the other hand, given that all relevant parties other than the Minister have supported the assignment, including National Treasury, the Department of Co-operative Government and Traditional Affairs, and the Financial and Fiscal Commission it is likely that there would be support for a switch from the Network Infrastructure Component.

However, as in the discussion on the relaxation of the proportion of the grant that could be assigned to ancillary costs, the implication of such a switch is a concomitant reduction in capital funding available for Phase 2.

9.11.2. Relative impact of other potential risks

Despite the chance of other risks being relatively low, they do still remain. Notwithstanding current reductions in fuel prices, fuel and other prices determining vehicle operator payments could rise faster than anticipated. Neither the APTMS nor the fare systems are fully bedded down, although fare system costs are now considerably more stable and predictable than APTMS costs at this stage.

Amongst other costs the requirements for law enforcement and network management are somewhat uncertain as TCT attempts new approaches to regulating and managing the minibus-taxi industry within the MyCiTi areas of operation.

This said, it seems unlikely that costs or revenues would vary by more than 15% either way if operational decisions are taken with careful consideration of the financial implications.

Table 9-11 shows costs and system revenues for the 2016/17 financial year represented in 2014 Rands, with all figures a) decreased and b) increased by 15%.

This illustrates two key issues. Firstly, it emphasises the fact that the actual figures could easily vary positively or negatively from the budgeted figures presented in the table earlier in this chapter.

Secondly, the table illustrates that because of relative differences in scale, a 15% increase in one component has a much larger effect than a 15% increase in another.

As has been demonstrated above, the vehicle operator costs represent the biggest cost component. A reduction in these costs by 15% would reduce the rates contribution by R67.2 million, or the equivalent of 1.13% of rates income. However, system revenues are significantly smaller; thus a 15% worsening of the vehicle operator cost figure would require a 24.6% increase in system income – or a 25.8% fare revenue increase – to compensate.

System revenue could increase without concomitant cost increases especially if there is a combination of fare increases and improved ridership where there is spare vehicle capacity, especially during the off peak. However, there are dangers of reduced fare revenue too. This may arise, for example, from prolonged civil unrest resulting in an unwillingness to use MyCiTi; although in such cases services could be cut back to reduce costs concomitantly – with significant risk remaining with the City due to negotiated *force majeure* clauses in the VOC contracts. A key risk to be avoided is the capturing of MyCiTi's off-peak ridership by rival minibus-taxis, since this would not only reduce revenues, but allow less scope for cutting vehicle supply without compromising headways in a manner which reduces service attractiveness.

PHASE 1 + N2 EXPRESS R 000's 2014 Rands	15% decrease	2016/17 TOTAL	15% increase
SYSTEM REVENUE	**231 911**	**272 836**	**313 761**
Fare revenue	203 278	239 150	275 023
Advertising	10 220	12 023	13 826
Fare revenue due to removal of illegal taxi, and other revenue	18 414	21 663	24 912
SYSTEM COSTS	**637 477**	**749 973**	**862 469**
Contracted Services	**499 695**	**587 877**	**676 059**
VO contracts	**380 906**	448 125	**515 344**
APTMS operations	11 628	13 680	15 732
Fare system operations	20 068	23 609	27 150
Station services	87 094	102 464	117 834
Operations Service & Marketing	**70 550**	**83 000**	**95 450**
Operations Management Service	50 150	59 000	67 850
Marketing & communications	20 400	24 000	27 600
Law enforcement services	**49 530**	**58 270**	**67 011**
Law enforcement(current & additional enforcement re minibus-taxis)	36 950	43 470	49 991
Security SSU	11 305	13 300	15 295
Minibus-taxi monitoring	1 275	1 500	1 725
Other City Costs	**17 702**	**20 826**	**23 950**
Insurance	16 067	18 902	21 737
Major maintenance	1 539	1 811	2 083
Transport information	96	113	130
Deficit before funding (System revenue minus system costs)	**-405 566**	**-477 137**	**-548 708**

Table 9-11: System costs and revenues showing a 15% reduction and a 15% increase in all cases

9.12. Response to risks

MyCiTi will need to respond to adverse financial results by applying the options that have been explained above to a greater or lesser degree.

9.13. Conclusion

The MyCiTi system was conceptualised in the context of national government's Public Transport Strategy and Action Plan. As often occurs with new initiatives of this nature, both capital and operating costs have been and continue to be higher than originally anticipated. Very substantial amounts of grant funding have been made available to implement the system, a process which is reaching completion. National government has proven willing to increase its grant funding in the face of higher costs. Risks in this area are now small, since implementation is largely complete.

However, there remains a degree of uncertainty in respect of operational subsidies. When the system was designed there was very little clarity in this area. Indeed at crucial points in system design there was no separation of the grant into implementation and operational components and little restriction on the amount of funding that could be used to fund operating costs. This has now changed, and in the face of current proven costs, if the system is to be extended across the City, the existing provisions are insufficient to ensure financial sustainability without an unreasonably high contribution from the City

On the one hand MyCiTi must do its utmost to deepen efficiencies, make savings and increase revenues. On the other hand national government and TCT must work together to clarify the long term fiscal envelope within which the system is to be developed further, and establish feasible standards and coverage in this context, such that the City's financial commitment is not extended beyond what is reasonable and fiscally sound and expedient.

10. Industry Transition

Chapter Summary

While the 2012 Business Plan contained only a rough outline of the proposed N2 Express arrangements, this service is now running. The 2015 Update explains:

- in more detail the rationale for the N2 Express Service, much of which is related to industry transition issues;
- the formation of the Khayelitsha taxi-based Company (KTBCo) which is envisaged to include all minibus taxi associations from the area;
- the formation of the Mitchell's Plain taxi-based Company (MTBCo) which initially includes only Route 6, which is responsible for direct routes to the CBD;
- the formation of a joint venture company combining KTBCo, MTBCo and GABS to run the interim service, with GABS appointed as the sub-contracted vehicle operator;
- the fact that, unlike in Phase 1, the ownership of shares in the N2 Express service provider is not a key source of earnings through dividends and that participants are not required to buy shares in the interim;
- the configuration of shares within the regional taxi based companies;
- corporate governance and oversight;
- the approach to compensation in N2 Express, where the only form of compensation to be paid is 'Voluntary Exit compensation' – payable at predetermined times based on passenger migration from taxi to MyCiTi;
- The substantial training and capacity building opportunities available to the taxi industry through the process.

The MyCiTi / minibus-taxi hybrid model developed through the study on the long term costs of MyCiTi (Making MyCiTi Financially sustainable – see Annexure F) is covered in some detail since this is a significant conceptual shift from original Phase 1 intentions. The 2015 Update identifies four different possible categories of service configuration within the hybrid model; sets out a process for implementing the hybrid model; and notes the importance of enforcement if the model is to be implemented.

Achievements

- A five year process of negotiated change resulted in arguably the largest empowerment deal in Cape Town, where more than two thirds of vehicle operations are assigned to companies which are made up exclusively of minibus taxi operators.
- 99.8% of all taxi licence holders who were offered compensation accepted such compensation. This has only been implemented where MyCiTi is running services. The buy-in by all taxi operators was achieved without violence.
- In cases where taxis are intended to be replaced 95% of legal taxis have

been surrendered and removed.

Challenges

- Many illegal taxis are still operating.
- Taxis that were previously not operating on the routes but had additional authorities incorporated into their permits are now operating on the routes where others have been removed.
- Some operators which have been left in place until we are able to provide sufficient replacement services are competing on routes where MyCiTi is already running services.
- Many passengers are still queuing for taxis despite fewer taxis.
- Inadequate enforcement.
- The amounts of compensation, which although it is fully paid by national government, have established precedents which may prove difficult to sustain.

Lessons learned and included in the Business Plan Update

- Inclusive nature of solution to Khayelitsha – where shares are offered also to those not directly affected – an inclusive solution.
- The need to pay 'nominal' compensation or other compensation to operating licences holders who have been inactive for a long time but do have rights which need to be bought out – or have rights for other reasons.
- Additional income compensation for income earned from ancillary activities which end when the licence is terminated.
- Exemption from vehicle scrapping under certain circumstances.
- The MyCiTi / minibus-taxi hybrid model developed through the study on the long term costs of MyCiTi (Making MyCiTi Financially sustainable – see Annexure F) the approach to compensation in N2 Express, where the only form of compensation to be paid is 'Voluntary Exit compensation' – payable at specific times.
- The substantial training and capacity building opportunities available through the process.

10.1. Phase 1

This paragraph deals with the industry transition strategy for the MyCiTi Phase 1 area. The N2 Express service industry transition strategy is described in paragraph 10.2.

A key element of MyCiTi is the intention to incorporate existing directly affected road-based public transport operators into the emerging IRT system, with a view to integrating services forming part of Integrated Public Transport Networks (IPTNs) in terms of the City's approved Comprehensive Integrated Transport Plan (CITP). In this regard, it is planned that the services provided by directly affected operators be replaced by the implementation of different phases of the MyCiTi system. The industry transition strategy is based on engagement with operators whose legal rights are affected and the surrendering of

operating licences and vehicles, in return for compensation and participation as shareholders in the Vehicle Operating Companies (VOCs) that are formed to provide the MyCiTi service.

10.1.1. Approach to industry transition

The viability of Phase 1 is based largely on demand, where there are sufficient numbers of people using the service. The operating and financial modelling assumed a complete replacement of existing bus and taxi users on Phase 1 MyCiTi routes, where services are directly affected. For this to be achieved, existing bus and taxi operations on these routes would need to cease operating. However, as discussed in Chapter 4, this approach is being reviewed in light of inefficiencies and challenges experienced in Phase 1.

Industry Transition is considering a deviation from the initial approach to allow some minibus-taxis to continue operating in the Phase 1 area, in such a manner that is supplementary to MyCiTi services, and at the same time is economically viable in its own right.[14] The proposed MyCiTi / minibus-taxi hybrid model is discussed in Chapter 4 with further detail is provided in paragraph 10.1.6.

10.1.2. Compensation model

The Compensation Policy, which was attached to the 2012 Business Plan, in updated through a process separate from this Business Plan.

10.1.3. Shareholding

The following process is proposed for division of shareholding within taxi associations: The City has estimated the cash after-tax dividend flows likely to be generated by the new vehicle operator companies, and is of the view that the total dividend to be generated by each of the companies will be insufficient to allow all current minibus-taxi operators to buy shares in sufficient quantities to produce future dividends equal to their current after-tax profits earned from operating within the taxi industry.

Where some operators within a taxi association do not take up the allocated minimum proportion of shares, the other operators in the association would be able to take up such shares against the relevant payment for the shares. Only if the available shares are not taken up within an association, will any other affected taxi operator within such vehicle operator company grouping be given the option to buy these shares. If any taxi shares remain unclaimed by affected taxi operators, the bus company shareholders can offer to take them up. The companies themselves will determine the cost per share (subject to City requirements) and the projected dividend (which will be a function of how profitably a company is run).

[1414] Additional lessons learned regarding the N2 Express are discussed in par 10.2

The City will issue requirements and limitations regarding cross-shareholding between companies, with a view to enhance competition between the companies.

10.1.4. Limitation of selling of shares

For the first five years of the operating contract, shares cannot be sold to any person or entity external to the shareholders of the company, except if an increase in capital is required, in which case the reduction may amount to more than 50% of the total participation. However, shares may be traded between shareholders of the company, up to a maximum shareholding of 33% of shares in the hands of a single legal entity (including subsidiaries or parent company of that entity) or of a natural person. Shares intended to be sold must be made available to other taxi shareholders, prior to bus shareholders, for purchase. This limitation is valid for a period of five years from the commencement date of the operating contract subject to the terms of the relevant company's shareholders agreement.

10.1.5. Alternate categories of compensation

Partially affected minibus–taxi operators

These are associations which operate on routes that will only be partially replaced by the MyCiTi services. To reduce competition and to enable effective enforcement on the MyCiTi routes, it is necessary to amend the operating licence conditions of partially affected operators and some level of compensation is required.

Nominal compensation

Nominal compensation may be offered to holders of operating licences (OLs) that have been inactive for extended periods of time. This will be determined through the City's historical surveys. Operating licences that qualify for nominal compensation are the licences that have been inactive for at least one year prior to the surveys conducted by the City. These licences expire after seven years. This group of operators is limited to Phase 1 of MyCiTi.

Additional income compensation

Additional income is income that is generated by the operator over and above income from the directly affected routes. It is usually generated from one or more of the following services:

- Contracted service (e.g. staff services)
- Learner service
- Long distance service
- Advertising contracts (inside the vehicle only)

It is appropriate that the operator is compensated for the income flowing from these additional business obligations or from derived additional income associated with a vehicle, as this would end when a vehicle is surrendered.

Criteria for additional income compensation require that the operating licence being surrendered must have the relevant authority for which the additional income compensation is applied for. The operator must also have a valid verifiable contract for the additional income.

Vehicle exemption

Vehicle exemption for minibus-taxi operators was informed by the following criteria:

- Evidence to suggest that the same vehicle was used for an alternate business or contract-specific service.
- Legal authorisation to operate the alternate business or contract-specific service by the appropriate regulating authority.
- Financial viability of the alternate business or contract-specific service

Additional authorities

There are a number of operators with OLs that give them the authority to run services on multiple routes, including routes earmarked for MyCiTi services. Considering that operators have been known to occasionally run services on MyCiTi routes during off-peak periods, it is conceivable that once taxis are removed from a particular route, operators who possess multiple-route OLs may shift their operations to the MyCiTi routes in competition with MyCiTi services. This may encourage other illegal operators to operate on MyCiTi routes, making enforcement difficult to manage. To address the problem, it is proposed that the City offer these operators some compensation in exchange for the removal of the MyCiTi affected routes specified in their OLs, thereby eliminating their right to operate on these routes.

10.1.6. MyCiTi / minibus-taxi hybrid model

A key finding from the study on *Making MyCiTi financially sustainable* (discussed in paragraph 4.5) is the review of the principle of completely replacing minibus-taxis on MyCiTi routes – in light of challenges and inefficiencies experienced in Phase 1.

Discussions have started with members of the minibus-taxi industry, including MyCiTi vehicle operators, to investigate the development of a hybrid minibus-taxi model in which the minibus-taxi industry and MyCiTi optimally co-exist and complement one another.

This paragraph explores the concept of this hybrid model by establishing key objectives, identifying appropriate categories of the hybrid model, and determining appropriate ways to regulate a potential hybrid model to supplement MyCiTi services. Co-ordinated interventions to attract minibus-taxi passengers to MyCiTi services are also described.

The objectives of the hybrid model are to:

- Maximise capacity utilisation of the MyCiTi service in peak periods by effectively regulating minibus-taxi competition and by permitting a limited number of operators to operate where MyCiTi capacity is insufficient to meet overall demand;
- Secure all off-peak demand on affected MyCiTi routes where sufficient MyCiTi capacity is available by removing minibus-taxi operators; and
- Encourage a shift from minibus-taxi passengers to MyCiTi where sufficient capacity is available.

These objectives can be achieved by providing sufficient capacity on affected MyCiTi routes taking into account the number of passengers carried by legal minibus-taxis. The management and control of the minibus-taxi services is essential to the successful implementation of a hybrid model. A similar approach may be followed regarding leaving in place some peak GABS services in Phase 1, where this is the more efficient manner to deal with the peak demand.

Complete eradication of illegal minibus-taxi operators is required via stringent and efficient law and administrative enforcement.

Categories of the hybrid model

Four potential categories of hybrid relationship between MyCiTi and minibus-taxis are proposed. The descriptions here are provisional, and subject to a careful assessment.

Category 1 is where only MyCiTi is permitted to operate. This is where demand is such that MyCiTi can service it cost-effectively.

Category 2 is where minibus-taxis are allowed to operate, but only in the peak. This is where demand is very strong in the peak and it would be costly to meet demand using only MyCiTi. Off-peak demand is sufficient to justify a MyCiTi service at reasonable headways if there is no competition with other vehicles.

Category 3 is the inverse of category 1, and is where MyCiTi does not operate in a particular area. This is either where demand is not sufficient, or where for other reasons MyCiTi is not able to operate. Category 3 operates as an on-demand type service similar to current minibus-taxi operations.

Category 4 is where MyCiTi contracts minibus-taxis to provide scheduled services. This could be similar to the current model used by the University of Cape Town's Jammie Shuttle.

The following table summarises the possible different categories of relationship between MyCiTi and minibus-taxis.

Category	Description
Category 1: MyCiTi only	• Routes serviced entirely by MyCiTi, e.g. Waterfront. • Relevant minibus-taxi ranks closed.

Category 2: Taxis only in peak ("TIP")	• Minibus-taxis allowed to operate at certain hours only. • No taxis in inter-peak or off-peak – MyCiTi only. Allow better MyCiTi headways and cost recovery through fares. • Apply to most minibus-taxi-impacted routes.
Category 3: Minibus-taxis only ("TO(e)")	• Routes and areas serviced entirely by minibus-taxis (e.g. previous 6m services) • Occurs where demand is too poor to justify MyCiTi or for geographic reasons. • No overlap with MyCiTi routes to avoid piracy. • Minibus-taxis tracked and contractual enforcement used.
Category 4: Contracting minibus-taxis (subject to review)	• Taxis are contracted to provide scheduled services, but this is not a 6m service. • Very limited circumstances, such as late evening services where demand is insufficient for buses, but TCT wants to provide scheduled services. • Current example: Jammie Shuttle. • Minimum standards; magnetic decals used.

Table 10-2: Summary of possible hybrid categories

10.1.7. Implementing the hybrid minibus-taxi model

Each category is context specific to areas/routes serviced by MyCiTi in Cape Town and therefore requires different specifications. To this end the following process needs to be adopted for each area/route to determine the appropriate way forward:

- Determine an appropriate hybrid model categorisation (as above, or amended)
- Identify the affected parties
    - The review of the route demand indicates that the hybrid model needs to be pursued in Phase 1 areas in and around the CBD, namely Vredehoek/ Gardens, Sea Point Main Rd/Hout Bay, Camps Bay via Kloof Street
    - In the inner city the affected associations in these areas are: Peninsula Taxi Association (PTA), Central Unity Taxi Association (CUTA)
- Determine the fleet requirements
    - The peak passenger demand to be supplied by the hybrid model refers to all the passengers that cannot be catered for by MyCiTi capacity to ensure that there is no oversupply of minibus-taxis operating on the route;
    - The fleet requirement can be determined by assessing the journey time as a ratio of route headways. Cycle times will be reduced as a result of fewer vehicles because in implementing the hybrid model a number of vehicles will be removed. The headway can be determined by considering the seating capacity of the minibus-taxi as a ratio of peak point passenger demand in an hour;
- Explore possibilities to implement a hybrid model with affected parties;

- Develop an approach to regulating the hybrid model.

One way to achieve these outcomes is to take appropriate steps to remove inner city routes from existing operating licences, and then either negotiate the provision of the limited minibus-taxi services with an existing VOC, or put this out as concession to open competition.

The most significant challenge will be to regulate the industry to achieve these goals, to keep illegal vehicles out of the market, and ensure that legally operating vehicles comply with the specifications of this service. This will require significant administrative and physical law enforcement.

Improved enforcement to curtail illegal operations

The following measures are essential to curtail illegal operations and encourage minibus-taxi passengers to shift to MyCiTi:

- Improved intelligence on minibus-taxi operations from regular surveys;
- Improved law enforcement to remove illegal minibus-taxi operators. For this reason, it is proposed that dedicated resources are secured to enforce illegal minibus-taxi operations (see Chapter 11);
- Marketing strategies to ensure that minibus-taxi commuters are encouraged to consider using scheduled MyCiTi services;
- Promotional incentives, such as free **my**connect cards for minibus-taxi passengers to encourage use of the MyCiTi service (see 7.4); and
- Ensuring that sufficient MyCiTi operational capacity is available.

It is important that efforts to encourage mode shifts from minibus-taxis to MyCiTi are synchronised between the responsible TCT departments for maximum coordinated impact. For example deploying marketing teams at the time of increased enforcement, and providing free **my**connect cards at the same location, whilst ensuring that sufficient operational MyCiTi capacity is provided on the relevant routes.

10.1.8. Training and capacitation

One of the undertakings national government has given to the minibus-taxi industry is that with the implementation of BRT there will not be significant job losses.

10.1.9. Employee register

To facilitate the employment of employees directly affected by Phase 1 of MyCiTi once owners surrendered their operating licenses and vehicles in exchange for compensation, the City created a register of directly affected employees which granted them preferential access to employment within the VOCs and other MyCiTi contracts.

10.1.10. Employment opportunities and reskilling

All contracting parties are obligated to use the employee register to fill posts and vacancies as a means to improve the employment opportunities for displaced employees. In this regard the VOCs, City and ancillary MyCiTi contracting parties in Phase 1 have employed displaced employees in various capacities within the MyCiTi project (including bus drivers and station management staff). A fair amount of capacity building and skills development of displaced employees is also in process to improve their employability. This includes artisan training, entrepreneurship, senior learnerships, driver training, soft skills coaching and financial literacy.

To facilitate the integration of all displaced employees into MyCiTi, the contracting parties have established an employee working group (EWG) to assist in the placement and skills development of displaced taxi association employees.

10.2. N2 Express service

The MyCiTi N2 Express service from Khayelitsha and Mitchells Plain to Cape Town CBD is the introductory footprint of the MyCiTi service into the Metropolitan South East (MSE). It is seen as a limited service to alleviate overcrowding on current public transport and provide a universally accessible service connected to Phase 1 of the MyCiTi network. The N2 Express also offers the minibus-taxi industry an opportunity to develop the requisite capacity to manage larger scale bus operations expertise in preparation for Phase 2.

The N2 Express became operational (with two of the four planned routes) on 5 July 2014. An interim three-year contracted service has been negotiated for the operation of the N2 Express. A joint venture was formed to operate the N2 Express services consisting of a Mitchells Plain Region-based Taxi Company, Khayelitsha/Congress for Democratic Taxi Association (CODETA) Region-based Taxi Company; and Golden Arrow Bus Services (Pty) Ltd (GABS). GABS is the Service Vehicle Operator (SVO) on behalf of the joint venture.

The N2 Express is intended to offer the following benefits:

To provide an opportunity to engage major industry players likely to be affected by Phase 2, in the long-term planning and development of improved public transport systems in the MSE;

- Introduce minibus-taxi associations in the MSE to MyCiTi;
- Catalyse the formation of new companies and partnerships with TCT;
- Create an opportunity for the development of new business models which may vary from those established in Phase 1;
- Offer the members of the minibus-taxi industry associations expected to be affected by Phase 2, the prospect to develop the required capacity to manage larger scale bus operations in the future; and
- Formation of regional minibus-taxi-based companies.

Initially the City intended to engage operators providing direct services between the MSE and the CBD. These include the Mitchells Plain-Cape Town Taxi Association (Route 6) and

the Khayelitsha - Cape Town Taxi Association as well as GABS. However, each of the two taxi associations operates within a broader context, which includes a number of other associations likely to be affected to some extent by the N2 Express service, thus a wider process of engagement was followed.

Furthermore, one of the key reasons for introducing the N2 Express service is to provide all associations in the area an opportunity to become involved in the design of the long-term service. It is envisaged that in the longer term, one company will be formed for Mitchells Plain as a whole and another for Khayelitsha.

10.2.1. Formation of Khayelitsha Taxi-Based Company (KTBCo)

Due to the nature of existing services in Khayelitsha it was decided, through engagements with the industry, that all minibus-taxi associations in Khayelitsha will form part of the planned Khayelitsha taxi region-based company. The Khayelitsha stakeholders will therefore follow an inclusive company formation approach. The company for the Khayelitsha region is referred to as the Khayelitsha Taxi Based Company (KTBCo).

10.2.2. Formation of Mitchells Plain Taxi Based Company (MTBCo)

The key association directly affected by the N2 Express MyCiTi service is Route 6, which carries passengers from the Mitchells Plain Town Centre to the CBD. To this end Route 6 became the primary shareholder in the MTBCo. However as MyCiTi extends its footprint into the MSE other taxi associations in Mitchells Plain will be impacted, and will be incorporated into the MTBCo. This will be facilitated through the distribution of additional shares in the Mitchells Plain region-based company. Mitchells Plain will therefore follow a phased approach to company formation. From the outset the regional minibus-taxi-based company will be have to be structured bearing in mind the possibility of adding additional associations, depending on how and when these associations become directly affected.

10.2.3. Joint venture company formation

TCT, as the City's contracting authority, determined that it would not be financially viable to have more than one vehicle operator contract for a limited service such as the proposed N2 Express service. TCT therefore entered into one interim vehicle operator contract for the N2 Express interim service. This means that the three directly affected parties need to work together to establish a new joint venture (JV) company to contract with TCT.

The JV Company consists of three shareholders: MTBCo, KTBCo and GABS. The proposed company formation structure is illustrated in Figure 8-1 below.

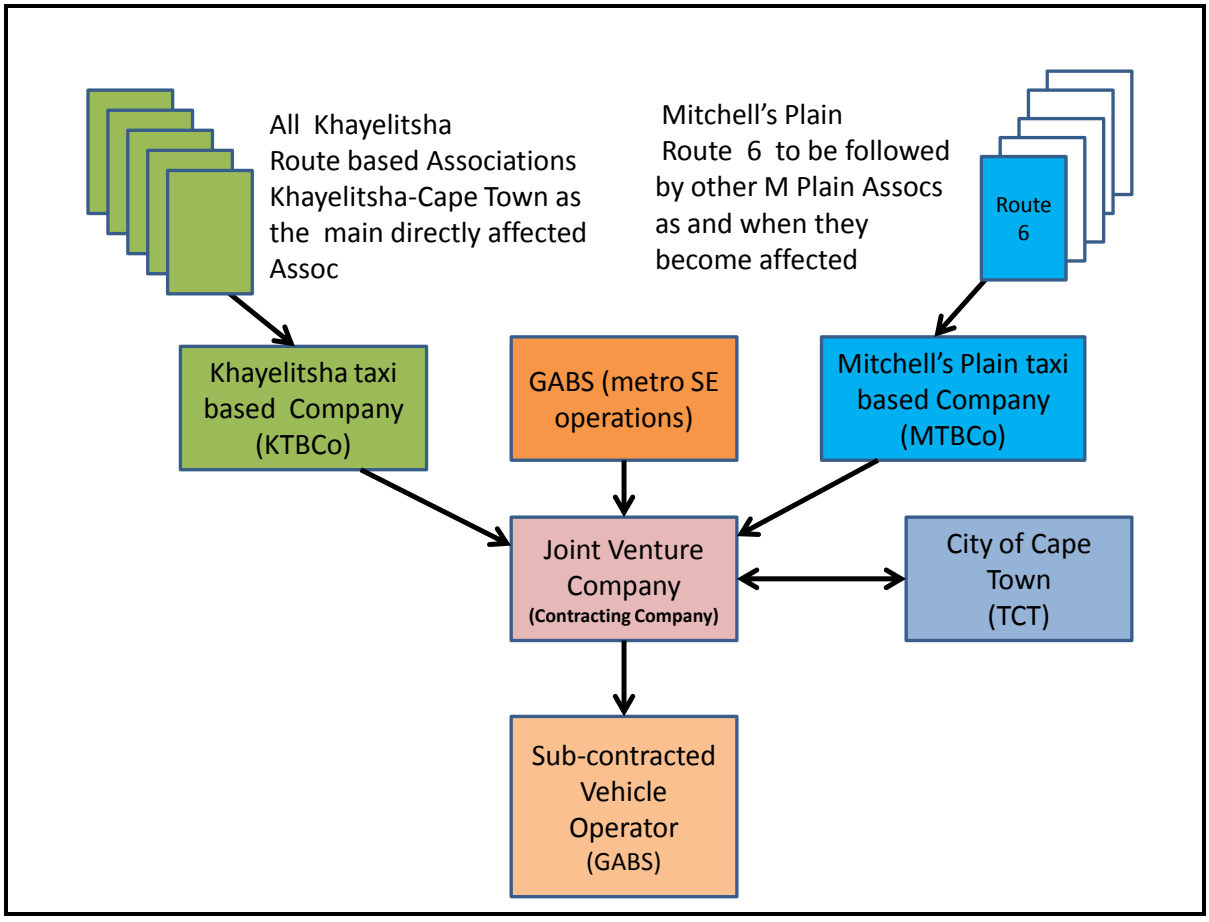


Figure 10-1: Joint Venture Company formation structure

In Khayelitsha all the route-based taxi associations are shown in one colour to indicate that all are included from the outset however in Mitchells Plain, Route 6 is the only association depicted in colour during this phase of MyCiTi roll-out. As previously established, it is intended that Mitchells Plain will follow a phased approach to company formation. GABS was appointed as the SVO by all directly affected industry parties and will operate the N2 Express service for three years.

Intentions for the longer term

Once the scale of services provided in terms of the Phase 2 contracts is sufficiently large, it is envisaged that the two taxi region-based companies will each develop their own operator capacity. This will result in there being at least three operators providing MyCiTi vehicle operator services in the MSE.

10.2.4. Shareholding in the respective area based companies and market share

Shareholding in the N2 Express is not designed to play the same role as in Phase 1, where MyCiTi was designed to replace all existing services and the payment of dividends will not be a significant mechanism through which participants are expected to benefit. The parties

affected by the N2 Express service will receive benefits through various means, including shareholding, decision-making, limited dividends, capacity-building for long term contracts, employment and compensation for minibus-taxi operators meeting requirements.

Furthermore, participants will in the interim not be required to pay for their shares. This will be required only when Phase 2 is initiated. This approach has been adopted due to the interim nature of the contract and the limited N2 Express service which is not intended to replace all existing services.

Principles of shareholding determination

Khayelitsha Taxi-Based Company (KTBCo), GABS, and the Mitchells Plain Taxi Based Company (MTBCo) agreed to an equal share allocation for the three-year contract period in respect of shareholding in the Joint Venture Company that will contract with the City to provide N2 Express services.

The equal shareholding principle is based on the understanding that the relevant contract with the SVO, rather than shareholding, should be used to address at least part of the 'risks' that the JV parties need to assume and the 'returns' they wish to derive from the three-year interim contract.

In the unlikely event that there is a significant mismatch between the distribution of shareholding amongst associations and the size of the MyCiTi service in their area as measured by fare revenue, the shareholding division may need to be reviewed.

Where steps by the region-based companies result in the City's inability to utilise the vehicles within the N2 Express services – and therefore in the City's decision to reallocate the vehicles elsewhere, the JV will carry the risk in that the total number of kilometres operated by the JV (through the SVO) will reduce.

Shareholding within each of the regional taxi-based companies

The shares in regional taxi-based companies are held by route-based association companies. The basis for shareholding is founded on legal Operating Licences held by minibus-taxi operators (on the principle that one operating licence is equal to one share in a route based association company) – subject to the discussion below.

While the regional taxi based companies are intended to eventually include all taxi associations from within the respective regions (at least those whose services are impacted upon by the expanding MyCiTi services) – not all such associations will necessarily participate initially. Furthermore some route associations will be more affected than others by the initial N2 Express service.

The relative shareholding of each taxi association within each of the regional taxi companies is determined in consultation between the City, the Taxi-Based Company and the affected associations. To this end Route 6 will initially hold all the shares in the MTBCo, however this will be diluted through the distribution of additional shares to accommodate other

stakeholders in MTBCo who are directly affected by the future expansion of MyCiTi in the MSE.

Corporate governance

It is anticipated that the JV and the area based companies will establish a suitable board of directors and adhere to principles of good corporate governance.

The partnership is subject to the following conditions:

- The JV and the area based companies adhere to good corporate governance principles,
- There is smooth communication and information sharing between the City and the JV or the area based companies,
- Disputes between the City and the JV and disputes among the parties are resolved fairly and efficiently (this refers to strategic or governance disputes and not operational disputes)

Approach to compensation

As in Phase 1, the City had to estimate the average profit of an operator running on a particular route, based on surveys conducted on the affected routes. The N2 Express service is intended to provide additional public transport capacity for the unserved population in the MSE, and thus will not impact on existing services. However, it is acknowledged that its implementation is likely to impact to some degree on existing operators and the interests of these operators needs to be taken into account.

The actual level of impact will be determined through pre implementation and post implementation surveys based on mechanisms to be discussed with the affected operators. If the number of taxis removed from the system amounts to the size of the market which shifts from taxis to the new MyCiTi system, then the market of the remaining taxis will remain constant and their business unaffected. It is anticipated that the number of taxis to be removed will consist of operators wanting to be paid compensation to exit the system, or those who have multiple licences and would like to receive compensation for some of their licences (continuing to operate fewer minibus-taxis on affected MyCiTi routes). To this end the only form of compensation to be paid will be 'exit compensation'.

The City intends to make voluntary exit compensation offers on two occasions. The first to be offered after the initial roll out of the service, and the second at some point after the full roll out of the MyCiTi service.

10.2.5. Voluntary exit compensation

The City will only offer voluntary exit compensation to those taxi operators that voluntarily surrender licences and scrap their vehicles. It is envisaged that if a sufficient number of operators surrender their licences the market for the remaining operators will not be reduced.

Operators qualifying for compensation

Compensation can only be offered under the following conditions:

- Where the MyCiTi service is designed to run on the same route or similar route to that of an existing public transport service; and
- Where the legal rights of operators (rather than their business interests) are affected.

The City does not intend using section 41 of the NLTA for the purposes of concluding the interim (short term contract), since a contract can only be negotiated once in terms of this section. The long term contract for the area will be negotiated in terms of this section, and an interim contract negotiated as a prelude to the long term contract.

The interim nature of the contract has implications for how the potential surrendering of licences and compensation is approached.

The City seeks to conduct the process of reducing the number of taxis operating in the area in a way which does not impinge on the livelihoods of current operators. Thus it is envisaged that the option of surrendering licences and taking compensation will be offered only to two sets of operators, namely

- Operators with multiple licences;
- Operators over 55 years who wish to retire from the business; and
- Widows or deceased estates.

The City may be prepared to offer compensation to other operators with good motivations, so long as the total capacity which the City is willing to remove is not exceeded. The compensation process will be negotiated and managed through the relevant taxi association.

Compensation value

For those operators who surrender licences and scrap their vehicles, compensation will be calculated based on the net present value of their legitimate operating profit over the period of their licence even where the validity of the licence exceeds the maximum three year period of the interim contract. They will also be given an allowance for scrapping their vehicle.

Timing of acceptance and payment of compensation

Minibus-taxi operators who qualify for compensation and surrendering of licences will be able to do so at predetermined window periods. The first window period will occur after the initial rollout of the service and the number of licences recommended for scrapping will be based on the available capacity and supply of MyCiTi buses. The actual payment of compensation and scrapping of vehicles will begin during the implementation of the N2 Express service. The second window period will commence post implementation of additional routes. The timing of compensation on the second window will be linked to roll-out of additional buses intended to absorb the demand from the removal of minibus-taxis.

Compensation mechanism

Compensation is payable to operators who are directly affected by the new MyCiTi services as outlined above. During the process the City will not oppose the renewal of an existing

operating licence (if it were to come up for renewal) based on MyCiTi rollout, unless there are compelling reasons to do so. Operators may choose to give up their licences, scrap their vehicles and take compensation, or continue to operate.

N2 Express training and capacitation

The N2 Express service for Mitchells Plain and Khayelitsha is expected to provide substantial training and capacitation opportunities for affected operators and initiate a long and robust interaction between the City and all operators in Mitchells Plain and Khayelitsha.

Displaced employees from the directly affected minibus-taxi associations will have an opportunity to apply for employment by the VOCs and other contractors, who will be subject to contractual obligations to give preference in their employment processes to displaced employees. These employment opportunities will be stable and permanent and employee's working conditions and benefits will be consistent with labour law.

The proposed training and capacitation programme for the N2 Express is guided by the company and ownership structure of the VOC. The VOC consists of three major shareholders which jointly form the contracting Joint Venture (JV) Company.

The JV Company, in consultation with the City, will coordinate the training and capacitation that meets the quality standards set by the City. For the programme to be beneficial it has been grouped into the following levels:

- Level 1 – Corporate governance and general management training: Targeted mainly at the taxi owners who are the members of the board of directors of the area based companies and the contracting JV Company.
- Level 2 – Technical management training: Targeted at employees within the value chain of the technical managerial side of the N2 Express service.
- Level 3 – Driver training: Aimed at the conversion of previously employed minibus-taxi drivers to become qualified MyCiTi bus drivers.
- Level 4 – Artisan apprentice training: Focussed on skills-development in the maintenance and operational environment of the JV Company.
- Level 5 -- Miscellaneous: Includes ad-hoc training interventions and local and international visits with the objective of skills-development

11. Public Transport Law Enforcement

Chapter Summary

Public transport law enforcement is a new chapter in the Business Plan and deals with enhanced approaches to law enforcement.

Achievements

- Agreement on the creation of a new Transport Command within the Directorate for Safety and Security, including a Transit Unit, which will be finalised in the next three months.
- Development of four focus areas for enforcement, and agreement to develop performance criteria by which to measure enforcement success.
- Appointment of 60 Law Enforcement Officers dedicate to security on MyCiTi
- Appointment of 13 Traffic Officers dedicated to public transport law enforcement

Challenges

- There is inadequate dedicated law enforcement capacity for MyCiTi and the transport sector.

Lessons learned and included in the 2015 Business Plan Update

- The need for a heightened focus on enforcement, especially in the regulation of minibus taxis and ensuring that fare evasion remains low.

TCT aims to enhance public transport law enforcement to facilitate safe and secure public transport in the City, by working with the Safety and Security Directorate in a manner that addresses public transport issues and transport law enforcement generally. To achieve this, the Mayoral Committee Members for Transport for Cape Town and Safety and Security formed a Law Enforcement Task Team in August 2013 to investigate an appropriate transport law enforcement model.

As a result of this investigation, TCT and the Safety and Security Directorate agreed that the existing Traffic Services Department be established as a Transport Command (TC), reporting directly to the Executive Director: Safety and Security. The TC will include a Transit Unit which will nest within the TC and will be subject to joint performance management, at least initially. TCT will provide funding for the appointment of additional officers to the Transit Unit, who will be dedicated to TCT related functions, and subject to joint performance management.

Four key focus areas for transport law enforcement in Cape Town emerged from discussions with counterparts in Transport for London:

Public transport safety and security

Provide safe, secure and reliable public transport services which people are confident to use to attract greater public transport patronage and reduce societal costs.

Public transport regulation

Ensure compliance with operating licence conditions and compensation agreements (through which minibus-taxi operators agreed to cease operating in competition with MyCiTi, and diligently to comply with operating licence provisions regarding remaining minibus-taxi operations) in order to: increase fare revenue, increase the demand for MyCiTi services and reduce conflict between public transport operators.

Traffic enforcement

Deny criminals use of the road network in the commission of crimes as well as the reduction of road injuries and deaths to reduce societal costs. Ensure the removal of illegal minibus-taxis competing with MyCiTi services to maximise levels of occupancy and revenue retention.

Revenue protection

Minimize fare evasion to increase fare revenue.

The TCT Enforcement Management Branch created by Mayoral Committee resolution (item MC 47/05/13) must be sufficiently resourced to determine transport enforcement needs and work closely with the Transport Command (TC), particularly in the removal of illegal minibus-taxis competing with existing and future MyCiTi services which is required for the implementation of the hybrid model discussed in 10.1.6. Within TCT intelligence gathering and strategic guidance regarding the minibus-taxi elements of TC activities will be provided by TCT Regulations.

The following key performance indicators have been considered to measure the performance of the Transit Unit according to their four key focus areas:

Public transport safety and security

- Reduction in public transport-related crimes reported per month; and
- Greater public confidence in using MyCiTi due to enhanced safety and security (measured through opinion surveys).

Public transport regulation

- A decrease in the number of illegal minibus-taxis on MyCiTi-serviced routes and areas.

Traffic enforcement

- Reduction in illegal minibus-taxis on MyCiTi-serviced routes and areas;
- Lower annual road injuries and deaths; and

- Reduction in the number of traffic violations.

Revenue Protection

- Higher net revenue (per month) from MyCiTi; and
- Reduction in fare evasion as monitored with surveys.

The TCT directorate will develop suitable mechanisms to monitor and verify that the relevant resources have been deployed as agreed within the period in question.

12. Marketing, communication and customer relations

Chapter Summary

The 2015 Update covers similar areas to the 2012 Business Plan but with new emphases, including

- Outlining the objectives of the communication strategy and how they are to be accomplished.
- Emphasising the need for communications and operations to work together.
- Additional marketing and communications approaches such as direct marketing activations, and direct communication distributed door to door when construction is to take place.
- Explanation of the public participation methodology which has been developed.
- Explanation of targeted campaigns, including around the 'moderation' exercise, encouraging taxi users to shift to MyCiTi, communicating that MyCiTi is less expensive than perceived, encouraging a readiness to stand on buses, safety and communicating around construction plans.
- Marketing and management of the free card initiative.
- The introduction of the new website launched with the introduction of distance based fares in August 2013.
- Priorities for civic and public education that have arisen in the context of rollout experience since 2012.

Achievements

- The MyCiTi brand has been successfully established as a recognisable and positive feature on the Cape Town landscape.
- Engagement with communities on the successful rollout of Phase 1A and N2 Express infrastructure.

Challenges

- Encouraging the migration to MyCiTi of those who have access to the system.
- Managing public responses in the face of MyCiTi infrastructure roll-out.

Lessons learned and included in the Business Plan Update

- Importance of wide range of communication modalities, including localised engagement as well as efficient customer information and services through means such as internet, call centre and mobi site
- A public participation methodology that aims to:
- Keep the community and stakeholders informed of infrastructure development in their areas;
- Keep the public and stakeholders informed of infrastructure and services that impact them; and
- Provide forums and channels for members of the public to voice concerns and

have their questions addressed.

12.1. Introduction

An integrated and proactive communication, marketing, stakeholder engagement and customer relations strategy is essential to create and maintain a positive relationship between MyCiTi and its diverse target audiences.

The strategy focuses on achieving two primary objectives, these are:

- Building and strengthening the MyCiTi brand to obtain the support of all Capetonians, whether they have access to the system yet or not. This is essential as all residents have to contribute to the costs of MyCiTi, although not all residents will benefit immediately.
- Promote the migration of those who have access onto the MyCiTi service, while actively promoting the use of MyCiTi during off-peak and over weekends for business, social and recreational engagements.

To accomplish these objectives, there has to be:

- A high level of insight into the needs and characteristics of passengers and potential passengers;
- Channels to provide information to passengers and potential passengers about the service, including effective and clear signage, maps, website, call centre;
- Appropriate and efficient responses to customer feedback. This means dealing with complaints in a service-orientated manner that promotes transparency and shows a commitment to excellence and continuous improvement;
- Messages targeted to each unique audience;
- Sharing information timeously with the public and stakeholders so that they are informed of construction and planning decisions that may affect them;
- Proactive and transparent engagement with the media; and
- A close working relationship and free flow of information with the systems, operations and infrastructure components of MyCiTi to continuously improve the service offering.

It remains critical that communication engages at a strategic and high level and that the team works closely with the City's senior management responsible for MyCiTi infrastructure, operations and system development. Marketing and communication must be integrated into the overall management of the system, so that both the back-end of the service and the front-of-house work together to achieve customer satisfaction.

The importance of strategic communication and marketing input into the decision-making process is critical as the system matures and is rolled out across the city. Conversely, the

operational decisions that shape the service need to inform public communication and marketing.

Brand revision

During the lifespan of this Business Plan the comprehensive brand manual will be updated to include the Transport for Cape Town ownership of MyCiTi, as well as refreshing the look and feel of our above-the-line advertising. A consistent brand image and identity flows through the above-the-line advertising, public engagement material, the website, system media such as fare pamphlets, and signage on stops, shelters and stations. The brand manuals help to guide the range of users applying the brand to achieve consistency.

Community and stakeholder engagement

On-going stakeholder and community engagement is critical for the optimal use of large infrastructure projects and new services, especially given the challenge of achieving progressively higher levels of modal integration.

The MyCiTi system and the infrastructure development that proceeds it necessitates close and on-going dialogue, as households, businesses and communities are directly affected by construction and by the provision of these dynamic new services.

As the MyCiTi system has rolled out into new areas, a public participation methodology has developed that aims to:

- Keep the community and stakeholders informed of infrastructure development in their areas;
- Keep the public and stakeholders informed of infrastructure and services that impact them; and
- Provide forums and channels for members of the public to air their concerns and have their questions addressed.

This has been achieved by making use of a range of different forms of communication and working closely with the infrastructure team and their subcontractors. Typically when construction begins in an area the following communication channels are utilised:

Community meetings

These are convened to advise affected communities of the construction work that will be taking place in their areas and warn them of potential inconvenience. Proposed route and system information is also shared with the community. These meetings provide a forum in which questions can be fielded and comments tabled.

Meetings have already been held in a range of affected communities including, more recently, Mitchells Plain and Khayelitsha for the launch of the N2 Express service. Previous sessions included Table View, Big Bay, Milnerton, Dunoon, Atlantis, Camps Bay, Sea Point, City Bowl, Walmer Estate/ Salt River, Hout Bay and Melkbosstrand. These public meetings

will continue as the service is implemented in new areas including for the Lansdowne/Wetton corridor.

E-mail newsletters

Regular electronic newsletters are issued to user groups and individuals affected by MyCiTi.

Targeted campaigns

Although most of the marketing and communication is focused on either brand building or communicating operational information there is also a need for specific campaigns. Overall these campaigns aim to shift the travel behaviour of passengers using incentives, promotions and effective communication.

The following has been identified as campaigns or potential campaigns that will roll-out during the course of this business plan period:

- **Moderation -**This campaign is focused on communicating system changes associated with the City's moderation measures discussed in paragraph 4.6 of this Update (route changes; cancelling of routes; change in intervals – mainly during the off-peak; change in kiosk hours; closing of certain kiosks) and the launch of two new stations. The strategy is to localise the communications to the affected area via the community newspapers while the website and press release will contain all the detail. This strategy is underpinned by the fact that people only take note of changes that affect them when the change is imminent, and that moderation is being implemented in a phased approach.
- **Change perception** -The campaign is focused on users of minibus-taxis as there is a misperception that MyCiTi is more expensive because the buses are well maintained and clean. Although we have used our advertising space to demonstrate how cost-effective the service is, there is a need to "get closer to the people". The strategy is for a marketing activation team to accompany Industry Transition, Law Enforcement and Automatic Fare Collection to address illegal taxis operating where previous services have been replaced by MyCiTi. This should be done over several consecutive days. The team will engage the stranded passengers, explaining the MyCiTi service to them and directing them to the Adderley or Thibault stations. Other activities are to design and distribute comic-style leaflets that explain the service in an easy-to-understand manner and to develop and air a radio serial.
- **Affordability** - This is a big campaign with a number of target audiences, including residents and tourists, with the aim of encouraging all to use the MyCiTi service. It includes demonstrating through various media how MyCiTi is less expensive than perceived; encouraging residents to visit tourist attractions on the MyCiTi routes during the off-peak and over weekends, including the Table Mountain route.; and targeting visitors, emphasising the Airport, Waterfront, Table Mountain and Hout Bay routes), and encouraging off-peak and weekend use.

- **Safety -** This will deal with traffic signals and red lanes and will be developed and implemented in conjunction with Law Enforcement.

- **Construction -** The focus is on communicating with affected communities. The Lansdowne/Wetton corridor construction campaign will be developed once clarity has been received one the timing and construction roll-out. This will be a large campaign that will stretch over a number of years.

As the MyCiTi system continues to roll out, this successful methodology will be employed and modified to meet the specific and unique needs of different communities. Direct interaction builds relationships with future champions and users of the system, and surface stakeholder perspectives that may contribute to operational decisions. Best practice internationally points to the benefits of stakeholder engagement as a way of building support and harnessing local knowledge and perspectives to assist operational planning.

Further in this regard Corporate Communications, TCT and MyCiTi are engaged in a process to align the brands, messages and communication methodologies so as to ensure a more comprehensive coverage of message to our existing and potential customers.

13. Risk Management

The risk management chapter is a new chapter and focuses on the major areas of potential risk that face the MyCiTi system.

A comprehensive risk register is prepared for the City's review and approval. Mitigation measures are agreed upon and action is taken in line with the detailed recommendations contained in the report. The current primary risks affecting the programme are as follows:

13.1. Financial Management of OPEX

13.1.1. Confirmation of Actual Operational costs and the National Operational Grant funding required.

The rollout of MyCiTi has progressed sufficiently to enable the updated Business Plan to review actual operational expenditure and revenue, and to revise initial projections based on these figures for Phase 1 and the planned N2 Express service. The process of updating the MyCiTi Business Plan has identified increasing operational costs which pose a significant risk to the financial sustainability of MyCiTi based on current revenue and funding sources.

An intensive 4-month review of current operational practices and service characteristics has been undertaken to analyse existing services and assess potential cost reductions and revenue improvements to achieve financial sustainability. The MyCiTi system moderation exercise has identified significant planned cost savings which are in the process of being implemented, without substantially reducing service levels.

Mitigating Measures

Operational costs have been reviewed through the moderation exercise described in paragraph 4.6. The preceding chapters in the Business Plan, in particular chapter 9 describes the City's strategy for reducing operational costs, improving revenues and obtaining additional funding support necessary to ensure financial sustainability for current and future phases of MyCiTi.

13.1.2. Escalation of cost - inflation

The increase in costs due to inflation may exceed the adjustment in projected revenue generated, by means of fare increases or the revenue from other income streams.

Mitigating Measures

This can only be monitored and to anticipate, annual adjustments to be as conservative as possible.

13.1.3. Potential threats by broader industry, such as illegal taxis.

The illegal taxis continuing to operate on MyCiTi feeder routes have a substantial effect on potential revenue.

Mitigating Measures

This needs to be addressed with the help of City enforcement.

13.2. Not spending operational implementation funding in line with spending targets

Not spending the funds, will result in the IRT Phase 1A project deviating from its projected cash flow, which can lead to the under-spending of the funds allocated to that specific financial year. Under-spending can result in reduced future funding allocations for operating processes.

Mitigating Measures

The CAPEX and OPEX budgets are reported on separately. CoCT allocated the funding required for the compensation packages and the aim remains to spend the funding in line with the projected cash flow.

13.3. Delays to the procurement and delivery of buses

13.3.1. Primary Risk

The implementation of the MyCiTi system was delayed in terms of the projected milestone dates listed in the October 2012 business plan. Currently, one of the most significant risks regarding MyCiTi implementation and operations is the delay to the manufacture and delivery of vehicles required for the roll out of the service. The services planned for each milestone can only become operational once the vehicles required to operate the service have been delivered. In addition, the completed infrastructure stands idle and needs to be secured and maintained, until the vehicles are delivered, fitted and licensed to operate.

The delays experienced to date were mainly due to strike action at the manufacturing plant. In addition severe weather conditions hampered the homologation process. In all the launch of Milestones 3 and 4 were delayed by at least three months. To mitigate the impact, interim services were launched with the vehicles available at the time.

The delayed delivery of buses impacts on the installation of the automated fare control and control centre equipment. The delay can potentially impact on the projected spending of CAPEX. Fortunately most of the vehicles are booked on production lines, mitigating the risk to an extent.

In addition, it must be highlighted that a lead period of approximately two years is required for the delivery of buses. Should Vehicle Operators be required to acquire buses for future phases, it must be appreciated that by implication, the Vehicle Operating Entities would need to be in place at least two years ahead of the commencement of the service.

The manufacturing process of the 12m & 18m busses are currently delayed by at least 4 weeks. The risk of National Strikes can still have an effect on the delivery process.

Mitigating Measures

Utilise all spare and available buses and increase headways. Further delays to the delivery of buses must be avoided as far as possible.

The roll out was adjusted to take the delays into account and the production process will be monitored.

Future orders for busses to be placed at least two years ahead of the first projected launch date.

13.4. Delays to the procurement of Control Centre Equipment due to the need to re-tender the contract

13.4.1. Delays to the procurement of Control Centre Equipment

The non-performance of the supplier for the Control Centre equipment, resulted in the contract with this company to be terminated. The re-tender process delayed the delivery of equipment by 6 months.

The risk remains that the delayed procurement of the equipment will affect CAPEX spending and that it may be affected by inflation and Forex fluctuation.

Currently, the 'ITS' redundancy is being used, until the APTMS tender has been awarded. This was designed as a back-up rather than a primary system, and depends on the actions of drivers, who may not have received adequate training, with the risk of errors.

Mitigating measures

A new contractor is expected to be appointed soon. The equipment required to be procured as soon as possible.

Training is to be provided to ensure that the redundancy solution remains stable for as long as required.

13.5. Delays to infrastructure projects pushing out the roll out of milestone and the overall end date of phases beyond the Business Plan dates and the planned roll out dates

The updated Master Programme, reflects the items listed in the previous Business Plan as well and indicates substantial changes. The delivery of the revised Milestone dates and the N2 Express service were delayed, due to unforeseen delays. The following were identified:

13.5.1. Delays to infrastructure due to public opposition, unrest, riots etc.

Delivery of infrastructure in the Joe Slovo area was delayed due to unrest and opposition from the community. Similar objections are being experienced at the locations for infrastructure at the N2 Express stops.

Mitigating Measures

Where acceleration options are not available, negotiate and agree an extension to the launch date.

13.5.2. Objections to the implementation of planned infrastructure.

Objections from communities / the public to the implementation of the infrastructure can cause delays. Objections received to date have been resolved, but this process has adversely impacted on the delivery of infrastructure.

Mitigating Measures

Pro-active engagement with the communities that will be affected by the implementation process can mitigate the initial objections. Continued and clear communication with the communities can assist in managing misconceptions and uncertainty.

13.5.3. Risks related to environmental issues as well as general risks associated with property acquisitions, stake holder negotiations and EIA processes.

The aim remains to procure land that is suitably zoned for the purpose required. Most of the land identified to date is City land. The Master Programme does not take lengthy EIA processes into account.

The acquisition of the land required for the implementation of the Phase 2 services can take as long as 18 months from signing the offer to purchase to transfer of property. This is a risk to CAPEX spending, due to the variability in the duration of the process.

Mitigating Measures

The land required for the implementation process to be identified as soon as possible. Assistance with quick responses from the various City departments can minimise potential delays.

13.5.4. Delays due to procurement processes, such as those caused by legal challenge by external parties.

The City is well prepared for any such challenges, but the risk of delayed implementation remains.

13.5.5. Re-location of informal dwellings within existing and proposed road reserves

The relocation of informal dwellings which generally requires the City to provide alternative accommodation could seriously impact on the construction duration of new infrastructure in instances of occupation of road reserves by informal settlements.

Mitigating Measures

Early identification of dwellings to be relocated is of utmost importance. The standard relocation process to be adhered to. The City to manage the illegal occupation of road reserves, with the aim to minimise future impact on infrastructure projects.

13.5.6. Delays to infrastructure required for Phase 1B

Delivery of infrastructure in the Jo-Slovo area was delayed due to unrest and opposition from the community. In addition the relocation of unforeseen services took longer than anticipated.

The infrastructure required for Phase 1B will only be completed by March 2015. Due to operational expenditure constraints, the service will be launched in October 2015.

Mitigating Measures

As additional acceleration options are not available, an extension to the launch date was agreed.

13.5.7. Delays to Hout Bay infrastructure due to lack of available sites for stations and staging.

Delivery of infrastructure in Hout Bay is delayed due to the lack of suitable sites to construct stations and create a staging area for the buses.

Mitigating Measures

The City is implementing a temporary staging facility, until the zoning for the required land is approved.

13.5.8. Delays to the start of construction of N2 Express infrastructure

The infrastructure could only start when the community objections were addressed as part of the Industry Transition process. In addition the exact stop locations were finalised later than anticipated.

Mitigating Measures

The City expedited the Industry Transition Process by signing an interim contract, which enabled the launch of the system. The construction of permanent infrastructure to be closely monitored, to ensure that the balance of the service can be rolled out as planned.

13.5.9. Delays to Century City Station

Delivery of infrastructure was delayed due to the delayed agreement between Century City and The City of Cape Town. The civils works will be completed by August 2014, but the station will most likely only be completed at the end of May 2015.

Mitigating Measures

The works to the stations to be defined clearly, to enable a detailed programme discussion with the contractor building the station.

13.6. Financial Management of CAPEX & Implementation of Infrastructure

13.6.1. Risk of not spending in line with the projected cash flow

Not spending as planned, due to variations in the contract value or delays can lead to under-spending of funds allocated to a specific financial year. The termination of the Control Centre contract influenced the spending of funds substantially.

Under-spending can result in a reduction of future funding allocations from National Treasury.

Mitigating measures

The professional team assists in tracking the overall cash flow projection against the actual spent values, to highlight possible risk areas in advance. Appropriate measures are taken to

re-align the cash flow to the original budgets. Major changes and the termination of contracts should be avoided as far as possible.

13.6.2. Risk of exceeding the estimated project cost

The budget was updated to reflect the current business plan. The risk remains that the actual costs can exceed the original estimates, resulting in a deviation from projected budget. The budgets of the various contracts are monitored closely to ensure minimal deviation.

Mitigating measures

The budget is currently monitored on a monthly basis, identifying the reasons for deviations and indicating mitigating/saving proposals where and when necessary. Expedite new appointments such as the business plan / operations management / Phase 2 Project management tender.

13.7. Risk of funding not being approved by Treasury, slowing the roll out process.

If the amount of future funding approved by Treasury is substantially less than the anticipated figures, the roll out of the infrastructure will be slower than originally anticipated.

Mitigating measures

Well motivated and substantiated funding applications based on past performance are prepared and submitted to National Treasury ahead of DORA allocations.

Notes:

With reference to the Monthly Risk Profile below please note the following:

The Monthly Profile is an average risk rating, taking the initial and mitigated values into account.

An increase in the profile can be due to an increase in the amount of high risk items or be indicative of a need for more effective mitigation.

The risk profile will improve with the confirmation of mitigating solutions that were or can be applied.

The slight decrease in risk of the past three months is mainly due to risk previously identified as potential events, now no longer being relevant or being mitigated. It is imperative to keep in mind that; with the project drawing to a close, the delivery dates of the last milestones

are more sensitive to risks when it realises. Although the risk profile indicates a marginal decrease, the risks remaining can still have a substantial effect when it realises.

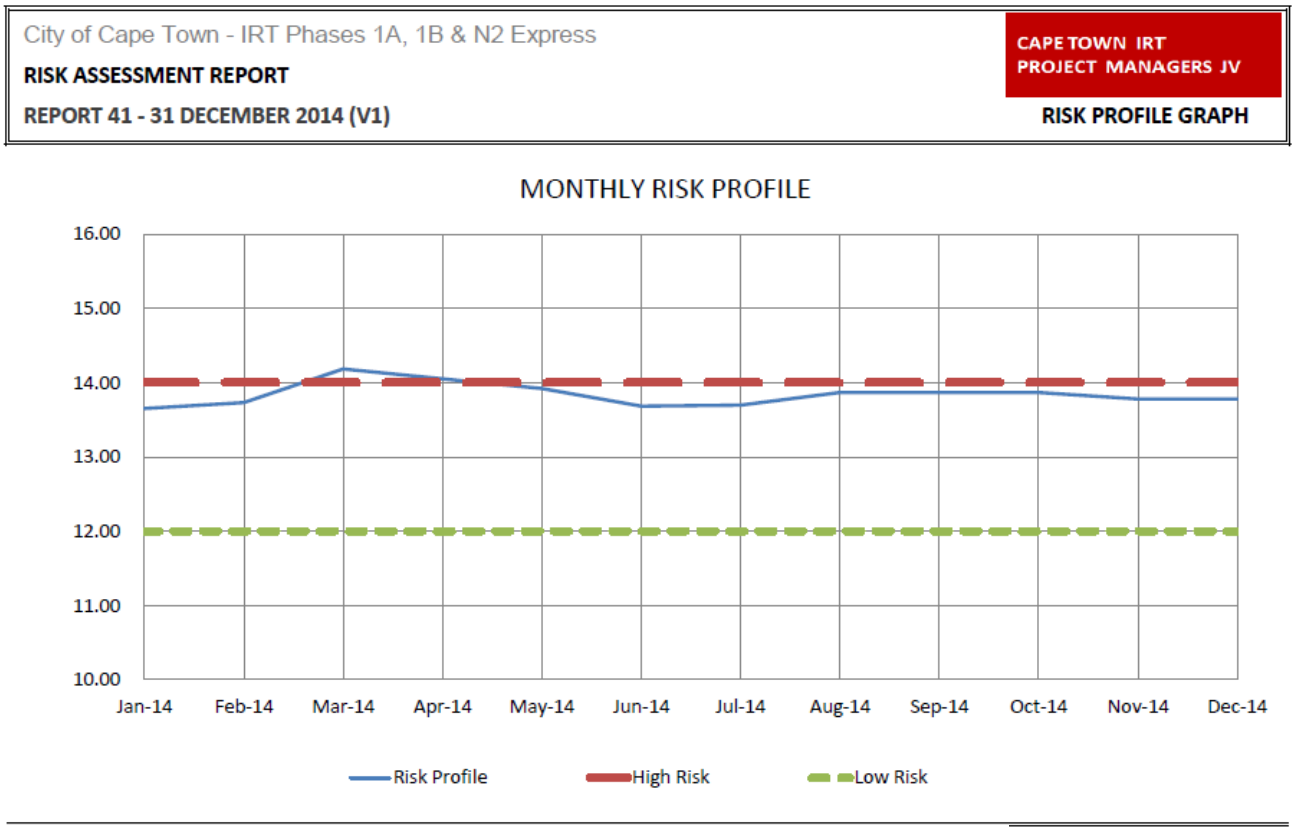


Figure 13-1: Risk profile

14. Annexures

Annexure A. Reports to Council[15]

Item No.	Subject	Date
TRS 04/10/12 MC 16/10/12 C31/10/12	(Rprt to TR&S PC) Amendments to MyCiTi Tariffs for the 2012/2013 Financial Year (Gershwin Fortune / Dawie Bosch)	2012/09/14
FIN 01/10/12 TRS 04/10/12	2012 MyCiTi Business Plan: Phases 1A, 1B, and N2 Express of Cape Town's MyCiTi Integrated Rapid Transit System (Dawie Bosch)	2012/09/17
TRS 04/10/12	TR&S PC report - IRT monthly progress report - July and August 2012	2012/09/18
FIN 01/10/12	Finance PC - IRT monthly progress report - July and August 2012	2012/09/18
TRS 08/11/12	(Rprt to TR&S PC) MyCiTi Automated Fare System: Update Regarding Roll Out Plan for December 2012 (Chantal Greenwood)	2012/10/24
FINTRS 08/11/12 MC 20/11/12 C05/12/12	(Rprt to TR&S & Finance PC) MFMA Section 33 Approval of the following MyCiTi IRT Long-Term Contracts: Briefing regarding Vehicle Operating Contracts (Dawie Bosch)	2012/10/26
TRS 08/11/12	(Rprt to TR&S PC) Naming of Bus Stops for the MyCiTi Integrated Rapid Transport System (Tom Pressinger)	2012/10/26
TRS 08/11/12	(Rprt to TR&S PC) Naming of Stations for the MyCiTi Integrated Rapid Transport (Tom Pressinger)	2012/10/26
MC 20/11/12	MFMA Section 33 Approval of the MyCiTi IRT Long term contract station management (tender no. 392S/2011/12)	2012/10/26
TR&S 05/02/13	Progress Report Oct 2012	2013/02/07
TR&S 05/02/13	Progress Report Nov 2012	2013/02/07
TR&S 05/02/13	Fare Collection Policy for contracted roadbased public transport	2013/02/07
C27/02/13	CoCT Fare Collection Policy for contracted roadbased public transport	2013/02/27
TCT 07/03/13	Directorate Vacancy analysis	2013/03/07
TR&S 10/04/13	IRT Quarterly Progress Report Oct – Nov 2012	2013/04/04
TR&S 04/04/13	Quarterly Progress Report Oct – Dec 2012	2013/04/04
TR&S 08/04/13	MFMA Section 116(3) amendment of MyCiti IRT long-term contracts	2013/04/04
TR&S 07/04/13	N2 Express Service (Khayelitsha and Mitchell's plain)	2013/04/04
TR&S 13/06/13	IRT Quarterly Progress Report Jan – March 2013	2013/06/06
TR&S 11/08/13	Progress Report Development of IPTN	2013/08/08
TR&S 08/08/13	Progress Report April, May 2013	2013/08/08
C24/08/13	MFMA Section 33 MyCiti IRT long term vehicle operating contracts	2013/08/28
C24/04/13	MFMA Section 116(3) amendment of MyCiti IRT long-term contracts	2013/08/28
C28/08/13	MyCiti VOC Agreements	2013/08/28
TCT 12/10/13	MyCiti 2nd Birthday celebrations	2013/10/03
TCT 13/10/13	Draft Universal Access Policy	2013/10/03
TCT 03/10/13	Testing the myconnect card issuing fee as a barrier to using	2013/10/03

[15] Reports before October 2012 are provided in the MyCiTi 2012 Business Plan.

	the MyCiTi public transport	
TCT 03/10/13	Progress expenditure on the capital budget of the Transport For Cape Town Directorate	2013/10/03
TCT 03/10/13	MyCiTi's second birthday celebrations	2013/10/03
TCT 03/10/13	Draft universal access policy for Transport for Cape Town	2013/10/03
TCT 03/10/13	The establishment, functioning and governance parameters of Transport for Cape Town	2013/10/03
TCT 03/10/13	Testing the myconnect card issuing fee as a barrier to using the MyCiTi public transport system ETC	2013/10/03
SMC 22/10/13	Tender number 121P 12012-13 - App granting short term concession - MYCITI bus stations etc	2013/10/18
SMC 22/10/13	MyCiti Integrated Rapid Transit - detailing of Capital asset for which rights are to be granted etc	2013/10/18
C 30/10/13	Testing the myconnect card issuing fee as a barrier to using the MyCiTi public transport system ETC	2013/10/23
C 30/10/13	MyCiti Integrated Rapid Transit - detailing of Capital asset for which rights etc	2013/10/25
FIN 04/11/13	Integrated Rapid Transit project - Quarterly Progress report for period from July to September 2013	2013/11/01
TCT 07/11/13	Confirmation of minutes - workshop on the draft comprehensive integrated transport etc	2013/11/04
TCT 07/11/13	Submission of the comprehensive integrated transport plan 2013 - 2018 (CITP) for Cape Town for approval	2013/11/04
TCT 07/11/13	Transport for Cape Town - 2013 - 2014 first quarters progress report on the Directorate etc	2013/11/04
TCT 07/11/13	Integrated Rapid Transit project - Quarterly Progress report for period from July to September 2013	2013/11/04
TCT 07/11/13	Progress expenditure on the capital budget of the Transport For Cape Town Directorate	2013/11/04
TCT 07/11/13	Transport for Cape Town (TCT) Directorate - Successes for 2013 calendar year	2013/11/04
TCT 07/11/13	Transport for Cape Town Directorate - Tariffs and charges for the 2014 - 2015 Financial Year	2013/11/06
TCT 07/11/13	Submission of the draft operating licence strategy (OLS) in conjunction with the comprehensive integrated etc	2013/11/07
TCT 07/11/13	Costs of MyCiti Birthday celebrations - 2012 and 2013	2013/11/07
SMC 26/11/13	Submission of the draft operating licence strategy (OLS) in conjunction etc	2013/11/26
SMC 26/11/13	2014 -15 IDP and Budget - Transport for Cape Town Projects	2013/11/26
C 04/12/13	2014 - 15 IDP and Beget - Transport for Cape Town Projects	2013/12/02
MC 04/02/14	Cape Metropolitan Transport Fund - Audited annual financial statements for the year ended 30 June 2013	2014/02/03
MC 04/02/14	Update of the City of Cape Town fares policy for contracted road - based Public Transport	2014/02/03
TCT 06/02/14	2013 - 2014 Second quarter's progress report on corporate performance, etc	2014/02/04
TCT 06/02/14	Tabling of the City's annual report and executive summary 2012 - 13 for comment	2014/02/04
TCT 06/02/14	Progress expenditure on the capital budget of the Transport For Cape Town Directorate	2014/02/04
TCT 06/02/14	Transport for Cape Town Directorate - Tariffs and charges for the 2014 - 2015 Financial Year	2014/02/05
TCT 06/02/14	Amendments to compensation policy as set out in annexure F to the 2012 MyCiti, etc	2014/02/05
TCT 15/02/14	Amendments to compensation policy as set out in annexure F	2014/02/07

	to the 2012 MyCiti, etc	
C 26/02/14	Cape Metropolitan Transport Fund - Audited annual financial statements for the year ended 30 June 2013	2014/02/21
C 26/02/14	Update of the City of Cape Town fares policy for contracted road - based Public Transport	2014/02/21
C 26/02/14	Amendments to compensation policy as set out in annexure F to the 2012 MyCiti, etc	2014/02/21
TCT 06/03/14	Progress expenditure on the capital budget of the Transport For Cape Town Directorate	2014/02/28
TCT 06/03/14	Draft universal access policy for the City of Cape Town	2014/02/28
TCT 06/03/14	Integrated Rapid Transit project - Quarterly Progress report for period from October to December 2013	2014/02/28
TCT 06/03/14	Permits for the use of Road Verges	2014/02/28
TCT 06/03/14	Transport for Cape Town - 2013 - 2014 second quarters progress report on the Directorate etc	2014/02/28
MC 18/03/14	Appointment of the commissioner - Transport for Cape Town, as an Executive Committee member, etc	2014/03/12
C 26/03/14	Appointment of the commissioner - Transport for Cape Town	2014/03/24
TCT 03/04/14	Draft parking policy for the City of Cape Town	2014/04/01
TCT 03/04/14	Universal access policy for Transport for Cape Town	2014/04/01
TCT 03/04/14	Placement of security huts on City - Owned Land	2014/04/01
TCT 03/04/14	Progress expenditure on the capital budget of the Transport For Cape Town Directorate	2014/04/01
FIN 04/04/14	Integrated rapid transit project - Quarterly Progress report for October to December 2013	2014/04/01
C 24/04/14	Universal access policy for Transport for Cape Town	2014/05/05
C 29/05/14	Universal access policy for Transport for Cape Town	2014/05/26
TCT 05/06/14	Development of a City wide 2032 Integrated Public Transport Network (IPTN) Plan	2014/06/03
TCT 05/06/14	Draft policy on the Regulation of the external and Privately owned CCTV on the City property	2014/06/03
TCT 05/06/14	Bloekombos railway station	2014/06/03
TCT 05/06/14	Withdrawal of the Ocean view drive road scheme in Sea Point	2014/06/03
TCT 05/06/14	2013 - 2014 Third quarter's progress report on Corporate performance	2014/06/03
TCT 05/06/14	Integrated Rapid Transit Project - Quarterly progress report for January to March 2014	2014/06/03
TCT 05/06/14	Progress expenditure on the capital budget of the Transport For Cape Town Directorate	2014/06/03
TCT 05/06/14	2014 - 15 Final Transport for Cape Town Executive Summary of the SDBIP	2014/06/03
TCT 05/06/14	Approval of the 2014 Mini-review of the Comprehensive Integrated Transport Plan (CITP) 2013 - 2018 etc	2014/06/03
TCT 05/06/14	Transport for Cape Town - 2013 - 14 Third quarters progress report on the Directorate etc	2014/06/03
MC 17/06/14	Development of a City wide 2032 Integrated Public Transport Network (IPTN) Plan	2014/06/17
C 25/06/14	Bloekombos railway station	2014/06/23
C 25/06/14	Withdrawal of the Ocean view drive road scheme in Sea Point	2014/06/23
C 25/06/14	Approval of the 2014 Mini-review of the Comprehensive Integrated 2013 - 2018 for Cape Town Mini Review of the Transport Plan (CITP)	2014/06/23
C 25/06/14	Development of a City wide 2032 Integrated Public Transport Network (IPTN) Plan	2014/06/23

C 25/06/14	Street naming and numbering resulting from the development process - policy revision and update	2014/06/23
C 25/06/14	Draft policy on the Regulation of the external and Privately owned CCTV on the City property	2014/06/23
C 25/06/14	MyCiti - asset transfer to vehicle operating companies	2014/06/25
TCT 07/08/14	2013 - 2014 Fourth Quarters Progress report on corporate performance	2014/08/06
TCT 07/08/14	Meter taxi rationalisation strategy for the City of Cape Town	2014/08/06
TCT 07/08/14	Progress expenditure on the capital budget of the Transport For Cape Town Directorate	2014/08/06
TCT 07/08/14	Integrated Rapid Transit Project - Quarterly Progress report for April - June 2014	2014/08/07
FIN 01/09/14	Progress on Directorate and departments performance 2013 - 14 Q4	2014/08/29
TCT 04/09/14	Progress Report on the Directorate and departments performance for the Fourth quarter of 2013 - 14	2014/09/01
TCT 04/09/14	Progress expenditure on the capital budget of the Transport For Cape Town Directorate	2014/09/03

Annexure B: Moderation of MyCiTi services: Summary of route-by-route moderation measures

Route	Current Revenue/ Cost	MODERATION MEASURES	Category, re taxi strategy. Affected by Minibus-taxis?	Notes	Cost Savings (per annum)	% saving	New Revenue / Cost
101	37.19%	1. Reduced headways to 11min/15min peak and 30 min interpeak 2. Sat & Sun reduced to 60 min headways 3. 60 min headway from 19:00 / 20:00 on weekdays 4. Last buses depart 21:00 on all days 5. Introduce short turn at Gardens	Cat. 2. Y	3	R 2 003 261	36.21%	83.82%
102	51.00%	1. Weekday headways stay as is 2. Sun reduced to 60 min headways 3. Increase evening headway to 60 minutes from 19:00 / 20:00 4. Last buses depart 21:00 on all days 5. Start service at 06:00	Cat. 2. Y	3	R 588 181	10.39%	63.56%
103	36.15%	1. Reduced residential loop capacity 2. Short-turn buses at Gardens 3. 60 minute service starts at 19:00 on weekdays 4. Last bus departs at 21:00 on all days 5. Increase Saturday & Sunday headways to 60 minutes 6. Increase weekday inter-peak headway to 60 minutes	Cat. 2 Y - 20% of peak taxi demand and 100% of off-peak taxi demand	1, 3	R 1 142 585	19.88%	78.20%
104	29.15%	1. Increase headways to 60 minutes from 19:00 / 20:00 2. Increased offpeak headways 3. Last bus departs 21:00 on all days 4. extend route to serve Waterfront Silo stop	Cat. 1. Y - MyCiTi to cater for 100% of taxi demand	3	R 839 688	19.45%	54.69%
105	31.28%	1. Increased interpeak and weekend headways 2. Significantly reduced driver ratio 3. Last bus departs at 21:00 on all days	Cat 2. Y		R 1 582 525	27.98%	43.43%
106	34.30%	1. Waterfront Silo leg of route removed 2. Increase headways to 60 minutes in the evening 3. Peak headways adjusted 4. TMCW staff and pax added 5. Route changes being investigated	Cat. 2. Y Short term strategy: MyCiTi to cater for 0% of taxi demand during the peaks but 100% of the taxi demand in the off-peaks	1, 3	R 755 040	10.38%	46.74%
107	44.15%	1. Waterfront Silo leg of route removed 2. Increase headways to 60 minutes in the evening 3. Peak headways adjusted 4. TMCW staff and pax added 5. Route changes being investigated	Cat. 2. Y - Short term strategy: MyCiTi to cater for 0% of taxi demand during the peaks but 100% of the taxi demand in the off-peaks	1, 3	R 229 172	4.20%	58.46%
108	23.94%	1. 108 HB to Hangberg leg cancelled 2. 109 HB to IY headways reduced 3. Service split 2/3 IY and 1/3 Hangberg 4. Run 12m route trunk extension buses in morning peak and from 12:30 to end of PM peak.	Cat.2. Y - MyCiTi to cater for ?% of taxi demand during the peaks & 100% of taxi demand in the off-peak	1, 3	R 5 821 191	34.05%	58.39%
108a					R 4 862 934		
108a						59.04%	
109	33.00%				R -210 346	-1.46%	
109a							
113	5.40%	Cancel Route	Cancelled		R 2 096 236	100.00%	0.00%
213	44.92%	1. Increased interpeak and weekend headways 2. Some peak lopping 3. last bus departs at 20:30	Cat. 1. N		R 866 120	22.26%	70.56%
214	63.53%	1. Shorten route to run from Parklands Main Rd to Marine Circle only. 217 can cover the other leg 2. Close Comorant and Seaside Village stops 3. Last bus departures at 21:30 on all days 4. Reduced headway to cover for 217 buses (which are no longer operating along Parklands Main)	Medium term: Cat 1. Short term: MyCiTi to cater for 0% of legal taxi demand.	3	R 522 185	8.01%	83.59%
215	66.69%	1. Increase headway in PM peak to 15 min to save one peak bus. Some peak lopping in PM peak to be expected. Spare bus in PM peak to be used on 251. 2. Introduce 60 min headway from 7pm 3. Increase weekend headways to 40 min 4. All services last bus departure at 21:30	Medium term: Cat 1. Short term: MyCiTi to cater for 0% of legal taxi demand.	3	R 497 926	11.09%	81.07%
216	53.46%	1. Increase headway from 13:00 from 30 min to 20 min. 2. Introduce 60 min headway from 8pm 3. Increase headway to 60 min on Sunday 4. Last departure at 21:30 on all days	Medium term: Cat 1. Short term: MyCiTi to cater for 0% of legal taxi demand.	3	R 633 191	17.68%	71.78%
217	48.73%	1. Run route from Melbos to Table View only 2. Reduced headway to cover for 214 buses (which are no longer operating along the beachfront) 3. Last bus departures at 21:30 on all days	Medium term: Cat 1. Short term: MyCiTi to cater for 0% of legal taxi demand.	3	R 796 077	13.15%	68.40%
230	22.47%	1. Interpeak headway inceases from 20 min to 40 min 2. Weekend headway inceases from 40 min to 60 min 3. 239 passengers added to 230. Will use T03 and change at Melkbos	Cat. 1 N	2	R 1 215 284	35.41%	42.84%
231	24.79%	1. Reduce peak headway from 10 min to 15 min. 2. Interpeak headway decreased to 30 min 3. last bus departure at 19:30 everyday 4. 60 min service on Sun 5. One peak bus saved	Cat. 1 N		R 1 575 769	49.21%	48.81%

Annexure B. Moderation of MyCiTi services: Summary of route-by-route moderation measures

Route	Current Revenue/ Cost	MODERATION MEASURES	Category, re taxi strategy. Affected by Minibus-taxis?	Notes	Cost Savings (per annum)	% saving	New Revenue / Cost
232	36.71%	1. Increase peak headway from 10 min to 12 min and 15 min 2. Interpeak headway to increase to 30 min 3. Increase Sat and Sun headways to 30 min and 60 min 4. 60 min headways start at 19:00 5. Last bus departures at 22:00 everyday	Cat. 1 N		R 2 678 108	45.88%	67.84%
233	70.96%	1. Increase peak residential loop headway from 10 min to 15 min. 2. Interpeak headway to remain at 30min and 20 min 3. Start 60 min night service from 20:00 on weekdays and 19:00 on weekends 4. Increase Sunday headways from 60 min.	Cat. 1 N		R 330 462	16.39%	84.87%
236	66.89%	1. Leave peak headway at 10 min. 2. Interpeak headway to be increased to 60 min and 20 min 3. 60 min headways starts at 20:00 on weekdays and 19:00 on weekends 4. Increase weekend headways to 30 min and 60 min on Sunday 5. last bus departs at 21:00	Cat. 1 N		R 750 800	31.41%	97.52%
239	13.91%	Route Cancelled when T03 fully operational	Cat. 1 N	2	R 7 368 011	100.00%	
251	35.83%	1. Peak spinner buses removed. 2. Every 2nd bus short turns at Century Gate 3. Can only be implemented when T03 extends to Century City	Cat. 1 N	2	R 2 739 830	30.80%	51.77%
A01	63.38%	1. Cancel leg from Civic to Waterfront 2. Start service one hour later at 05:00 3. Standby bus required at Civic in PM peak 4. re-instate 12m buses	Cat. 1 N		R 2 748 740	27.85%	87.84%
T01	60.87%	1. Reduce Waterfront leg capacity 2. Increase interpeak capacity 3. Last bus departures at 22:00 4. Introduce express and engaged buses 5. Can only be introduced when 28 x 18m buses arrive	Cat. 1 N	2	R 537 731	1.20%	77.90%
Totals	43.39%				R 42 970 699	22.18%	68.65%

1 = route amendentments to be investigated and proposed by system planning

2 = short term proposals still to be identified. Long term proposals dependent on arrival of buses, etc

3 = off-peak headways subject to change dependent on minibus taxi information

Annexure C. Summary of measures considered during MyCiTi moderation exercise

Note: some items have been implemented, others are scheduled to be implemented, and other items are being investigated to assess whether they are viable actions to pursue further.

Ref No	Description of measure	Measures to be taken to address measure	Shortened description	Confirmed?
1.00	**1. Proposed operational changes with cost implications to be signed off**			
1.01	Operations implement measures without costing these measures, and without engaging with System Planning, Business development and TCT Finance in this regard	Operations must ensure that proposed amendments to the System Plan are costed, and that amendments are signed off in advance by System Planning, Business Development and TCT Finance.	Protocol for approval to changes to Sys Plan to consider costs; and parameters within which Ops can change/deviate from the Sys Plan.	Yes
2.00	**2. Smoothing of peak to off-peak differential**			
2.01	The high peak demand is being accommodated by scheduling and operating additional vehicles. In many cases this results in vehicles not being filled to the capacity that the system modelling assumed for purposes of modelling system requirements and resultant costs.	Cease accommodating peak demand to the extent currently being done	Peak/Off-peak differential: Parameters for adding busses.	Yes
2.03	Off-peak ridership is good on some routes but very low on other routes, particularly at certain times of day.	Increase peak/off-peak fare differential.	Peak/Off-peak differential: Revise fare tariff rate and structure.	See new tariffs
2.04	Off-peak ridership is good on some routes but very low on other routes, particularly at certain times of day.	Market the advantage of travelling in the off-peak.	Peak/Off-peak differential: Marketing of off-peak travel	Yes
2.05	Off-peak ridership is good on some routes but very low on other routes, particularly at certain times of day.	Aggressive travel demand management strategies, including engaging with business on flexitime issues (refer to CITP for TDM strategy.)	Peak/Off-peak differential: Flexible working and School hours	Provisional
2.06	Off-peak ridership is good on some routes but very low on other routes, particularly at certain times of day.	Work towards land-use changes that will encourage smoother demand and better counter-flow ridership through Transport Orientated Development [TOD).	Peak/Off-peak differential: Land use optimisation	Medium to long-term
3.00	3. **General reduction of headways at night and on Sundays**			
3.03			Design of night service (network and optimum headways)	Provisional
4.00	4. **Reduce recovery time**			
4.03	Recovery time throughout the system is somewhat longer than was planned.	More pro-active & all-inclusive usage of the CC system is dependent on the existence of a CC Contractor to deliver on a fully tested and commissioned system.	Recovery time: Control centre improvements (timing points)	Provisional
5.00	5. **Signal prioritisation on bus routes**			

Ref No	Description of measure	Measures to be taken to address measure	Shortened description	Confirmed?
5.01	In general, signal prioritisation for buses could be improved	1) Improve signal priority on bus routes, including more aggressive signal pre-emption on dedicated bus routes. 2) Pre-emption - dependant on equipment	Signalisation: Improve signal priority	Yes
6.00	6. **Reduction of station staffing currently addressing operational shortcomings**			
6.01	Additional staff beyond the planned number are being employed at stations to deal with three tasks which are required because of malfunctioning technical systems	Research required which encompasses an examination of best practice internationally to ascertain what needs to be done to address door malfunctioning for the long term	Station staffing: Short term - ensure door maintenance	Yes
6.02	Station doors malfunctioning mainly because of poor electronic communication between bus and station and are having to be operated manually	Ensuring safety of door closing could be addressed by having doors which re-open if they strike an obstacle; this would make the implications of them closing on passengers less serious.	Station staffing: Medium term - independent assessment re: suitability of door system design	Yes
6.03	Station ambassadors are required to provide passenger information due to dysfunctional passenger information displays (PID).	The accuracy, reliability and maintenance / support of the real time passenger information (live feeds) displayed on the PIDs, website and mobi sites (TCT's & Grapevine's), as well as being available through the TIC, is fully dependant on the existence of a CC Contractor. Since there is no CC Contractor in existence, certain functionality has been affected as a result of the implementation being incomplete and there being no maintenance/support in respect of all things related to the CC.	Station staffing: passenger info displays (PIDs) to be returned to full and correct operational state (also resolving incorrect reporting due to buses holding close to platform).	Yes
6.05	Staff are also used to manage queues.	A appropriate approach to queuing must be devised – probably entailing abolishing the practice of officially managing queues	Station staffing: removal / reduction of queue management	Provisional
6.07	Additional staff beyond the planned number are being employed at stations to deal with three tasks which are required because of malfunctioning technical systems	Research required which encompasses an examination of best practice internationally to ascertain what needs to be done to address door malfunctioning for the long term	Station staffing: Short term - PIDs	Yes
7.00	7. **Reduction of kiosk working hours**			
7.02	Kiosks are often open for long hours at stations where usage is extremely low, at significant cost. Savings could be made by splitting shifts	Reduce kiosk staffing hours and use split shifts to reduce staff costs.	Reduce kiosk working hours.	Yes
7.03	Kiosks are often open for long hours at stations where usage is extremely low, at significant cost. Savings could be made by splitting shifts	Reduce kiosk staffing hours and use split shifts to reduce staff costs.	Implement kiosk split shifts.	Yes
8.00	8. **Closure of low use kiosks**			

Ref No	Description of measure	Measures to be taken to address measure	Shortened description	Confirmed?
8.02	Some kiosks are very low use and close to other stations. Such kiosks could be closed completely to save costs.	Investigate closure of low use kiosks where feasible	Implementation of reduced staffing at low use stations incl. closure of kiosks).	Yes
9.00	9. **Revenue protection**			
9.02	Passengers travelling on the system without paying simply results in a loss of income to the City, which if allowed to continue with impunity, will only increase. Currently, there is no inspection taking place on the MyCiTi System.	Immediate inspection and a show of zero tolerance needs to immediately commence. For the interim, initially for a period of a month, inspection to be undertaken through a VO under the AFC Contract, which can be coupled to recording fare related transgressions done by the driver and the station staff.	Inspections: Appoint private contractor through tender process	Provisional
9.03	Allowing the use of paper tickets by passengers adds to the risk of loss of revenue if protocols are not strictly adhered to by both the station staff and the drivers.		Removing most categories of paper tickets from the system	Provisional
9.04	Allowing the use of paper type contractor passes/cards for access to the system, contributes to the risk of loss of revenue if protocols are not strictly adhered to by the station staff and the drivers.		Removing most contractor passes and develop tracking mechanism	Provisional
9.05	Monitoring fare related transgressions by the station management staff is as important as inspecting passengers - especially where the cashiers in the kiosks are concerned.	Much more pro-active usage of the CC technology implemented - such as, CCTV . Also, much more pro-active & all-inclusive usage of the AFC access gate 'alarm' reporting system.	Monitoring access control at stations and issuing penalties	Yes
9.06	Monitoring fare related transgressions by drivers is as important as inspecting passengers - especially where the feeder routes are concerned.. However, it may not be intentional and just simply as a result of inadequate training.	Much more pro-active usage of the CC technology implemented onboard the bus - such as, CCTV .	Monitoring of access control on feeder buses and issuing penalties	Yes
10.00	**Driver ratio**			
10.02	Driver to bus ratios are significant higher than planned. We are unable to demand a lower driver ratio as provided for in the contacts with the VOC's because we do not have the control centre capabilities required to do so.	This is to be achieved in the short term drawing up a manual driver schedule until software is available. This item is dependent on the award of the CC contract.	Introduce Optimised Driver ratios as determined by DIVA duty optimisation module (existing routes (1.8))	Once new contractor appointed
10.04	Driver to bus ratios are significantly higher than planned, and will only be in a position to demand lower driver ratios, as provided for in the VOC contacts, when a CC Contractor is in existence.	DIVA rostering module to be procured when a CC Contractor is in existence – preferably as part of an imminent upgrade from Diva V3.0 to Diva V4.0. This item is dependent on the award of the CC contract.	Driver Ratio: Purchase DIVA Optimisation modules i.e. Vehicle, Duty, Rostering	Provisional

Ref No	Description of measure	Measures to be taken to address measure	Shortened description	Confirmed?
10.07	Driver to bus ratios are significant higher than planned. We are unable to demand a lower driver ratio as provided for in the contacts with the VOC's because we do not have the control centre capabilities required to do so.	This is to be achieved in the short term by drawing up a manual driver schedule until software is available.	Introduce Optimised Driver ratios as determined by DIVA duty optimisation module (progressive implementation of lower driver ratios (1.6))	Provisional
11.00	**11. Removal of minibus-taxis from MyCiTi routes where appropriate**			
11.01	Many taxis continue to operate resulting in significantly lower fare revenue than modelled, this is exacerbated by the operations of illegal operators that have no authority to operate in the MyCiTi routes	However, taxis that remain should be based on a new set of permits which ensure that they work complementary to MyCiTi not in competition with it. The support of Law Enforcement is key in dealing with the illegal operators.	Mini-bus Taxi Removal: regular surveys to monitor taxi compliance	Provisional
11.02	Many taxis continue to operate resulting in significantly lower fare revenue than modelled	Competing taxis must be removed from routes, with the proviso that in cases where we will not be able to provide the full demand some taxis may remain.	Mini-bus Taxi Removal: Capacity vs demand investigation	Provisional
11.03	Many taxis continue to operate resulting in significantly lower fare revenue than modelled	Competing taxis must be removed from routes, with the proviso that in cases where we will not be able to provide the full demand some taxis may remain.	Mini-bus Taxi Removal: Immediate removal where appropriate	Provisional
11.04	Many taxis continue to operate resulting in significantly lower fare revenue than modelled, this is exacerbated by the operations of illegal operators that have no authority to operate in the MyCiTi routes	The support of Law Enforcement is key in dealing with the illegal operators. Taxis that remain should be based on a new set of permits which ensure that they work complementary to MyCiTi not in competition with it.	Mini-bus Taxi Removal: ongoing law enforcement Category 1 and 2	Provisional
11.05	Many taxis continue to operate resulting in significantly lower fare revenue than modelled	Competing taxis must be removed from routes, with the proviso that in cases where we will not be able to provide the full demand some taxis may remain in peak periods.	Mini-bus Taxi Removal: Implementation of Hybrid Strategy (as per route-by-route proposal) Category 1 and 2.	Provisional
11.06	Industry Transition and Law Enforcement have been instructed to remove legal and illegal minibus taxis. Marketing campaign required as part of hybrid model.	A marketing campaign needs to be conceptualised and synchronised to 'capture' stranded taxi passengers.	Mini-bus Taxi Removal: A marketing campaign needs to be conceptualised and synchronised to 'capture' stranded taxi passengers.	Provisional
12.00	**12. Fare system**			
12.01	The AFC Assistant service provided, by the AFC Contractor, as a VO, for the issuing of free cards, the selling of standard cards on the buses during the rollout period of new routes, as well as the preloading of cards during the lead up to a new rollout, is costly., in particular if the AFC Assistant	Reduce the period of service as the demand on the ground for the AFC Assistants decreases, so as to justify the cost.	Automated preloading of Myconnect cards	Provisional

Ref No	Description of measure	Measures to be taken to address measure	Shortened description	Confirmed?
	service is demanded by Ops for a period longer than 2 weeks.			
12.02	Due to the NDoT certification requirement for the AFC system to be 'online' everytime a transit product is loaded onto the card, the City pays the bank a load fee of R1.50.	Lobby NDoT to have this certification changed to only require the AFC System to be 'online' for the first time a transit product is loaded onto the card (in order to initialise the product 'bin'), and thereafter for product loads to be done 'offline', when there should be no load fee charged.	Removal of R1.50 online charge for top-up of Mover package (not currently charged - this measure intended to reduce risk)	Provisional
12.03	Replacing manned kiosks with card vending machines (CVM), thus removing the costs of resourcing kiosk, in particular where quiet stations are concerned.	The first 12 CVMs are to be implemented in the first part of next year, These can potentially be installed in 12 'quiet' stations.	Installation of CVM's to replace point-of-sale.	Yes
12.04	Pressure of kiosks can be alleviated by encouraging people to use cellphones and internet to load my-connect credit.		Pre-deposit card load of mover.	Provisional
13.00	13. **Retail revenue**			
13.01	Provision is being made to rent out retail space on various stations to earn revenue.		Retail: implement tender	Provisional
13.03	Provision is being made to rent out retail space on various stations to earn revenue.	The existing tender is being revised to maximise 1) appeal to prospective retailers and 2) potential revenue to the City.	Retail: Finalise and re-issue revised retail tender.	Provisional
15.00	**15. Trunk Route T01**			
15.02			T01: Improve signal prioritisation	Yes
15.03	Accommodation of current peak demand drives significant costs as buses stop at every station.		T01: Implement express services	Yes
16.00	16. Hout Bay (**108 & 109)**			
16.01	Significant costs incurred on positioning kilometres because no holding area in Hout Bay	Staging area in Hout Bay is required to reduce significant positioning kilometres	Hout Bay temporary staging area	Yes
16.10	Losing an estimated R0.5m per year revenue because no stop at 12 Apostles Hotel.	Scope for locating stop at 12 Apostles needs to be actively investigated and driven.	Hout Bay: 12 Apostles stop - Safety	In amended form
25.00	25. **Parking Management**			
25.01	Investigate park and ride options, costing		Park and Ride: Assess revenue potential	Provisional
25.02	Charging for onstreet parking within proximity to MyCiTi stations and ringfence for MyCiTi.	Initial proposal: 'Station Management Contractor' in conjunction with 'Business Development' should urgently implement as this should create significant revenue / income.	Park and Ride: Inc. into parking management tender	Provisional
26.00	26. **6m Services**			

Ref No	Description of measure	Measures to be taken to address measure	Shortened description	Confirmed?
26.01	Investigate routes and areas where taxis are operating and where our 6m should be implemented		Implementation of the 6m service reconsidered.	Provisional
27.00	27. **Route by Route analysis (detailed review)**			
27.02	Current systems plan and timetable is not attracting high levels of patronage along some routes and along most routes at different times of the day.	Undertake detailed route by route analysis based on demand profiles to assess profitability and identify potential cost savings	Route-by-Route optimisation: Balanced approach (existing routes)	Yes
27.04	Route-by-Route: application of deficit reduction principles on routes not yet implemented.		Route-by-Route: application of deficit reduction principles on routes not yet implemented.	Yes
29.00	**29. Alternative income generation strategies to reduce deficit**			
29.01	Cost reduction measures must be considered in parallel with income strategies to balance costs.	Increasing tariffs / fares for future financial years to reflect actual costs for distances travelled.	Assess impact of base fare increases	Yes: 2015/16
29.02	Cost reduction measures must be considered in parallel with income strategies to balance costs.	Resolve 'Core and Non-Core' services funding allocation on budget.	Resolve core and non-core issues: Ensure that City dept. fund their own costs unless MyCiTi core cost.	Provisional
30.00	**30. Infrastructure improvements**			
30.02	Congestion and signalling slows down buses and increases cycle time which requires additional buses to service demand.	Optimise system performance by identifying congestion points and improving Infrastructure routing to prioritise MyCiTi bus right of ways.	Infrastructure and signal improvements to prioritise public transport.	Yes

Annexure D. Route Descriptions

Updated Phase 1A route descriptions

Route No.	Route Title	Route Description
Trunk Services – Dedicated Median operations		
A01	Airport - Civic Centre	Airport Terminal, continue Airport Approach Road, continue N2, left Nelson Mandela Boulevard, continue Hertzog Boulevard, u-turn on busway, continue Hertzog Boulevard, Civic Centre Station
T01	Du Noon - Table View - Civic Centre - Waterfront	Usasaza Station, continue Potsdam Road south, right Blaauwberg Road, Tableview Station, continue Blaauwberg Road, left Marine Drive, left Milner Street, continue Paarden Eiland busway, continue Culemborg bus lane, continue Hertzog Boulevard, Civic Centre Station, continue Hertzog Boulevard, left Heerengracht, right Hans Strijdom Avenue, continue Western Boulevard, right Granger Bay Boulevard, right Granger Bay Road, left Breakwater Boulevard, Waterfront Station
T02	Atlantis - Table View - Civic Centre	Atlantis Station, continue Reygersdal Drive west, left Dassenbeg Road, left West Coast Road, right Melkbosstrand Road, continue Otto Du Plessis Drive, Melkbosstrand Station, left Birkenhead Drive, right West Coast Road, left Blaauwberg Road, Tableview Station, continue Blaauwberg Road east, u-turn, continue Blaauwberg Road west, left Marine Drive, left Milner Street, continue Paarden Eiland busway, continue Culemborg bus lane, continue Hertzog Boulevard, Civic Centre Station
T03	Atlantis - Table View - Century City	Atlantis Station, continue Reygersdal Drive east, right Charel Uys Drive, left Dassenbeg Road, left West Coast Road, right Melkbosstrand Road, continue Ottu Du Plessis Drive, Melkbosstrand Station, left Birkenhead Drive, right West Coast Road, left Blaauwberg Road, Tableview Station, continue Blaauwberg Road east, u-turn, continue Blaauwberg Road west, left Marine Drive, left Racecourse Road, right Omuramba Road, continue Ratanga Road, left Century Link, right Century Way, Century City Public Transport Terminus
Feeder Services: Type – Kerbside, mixed traffic conditions		
101	Vredehoek - Gardens - Civic Centre	Civic Centre Station, u-turn on busway, continue Hertzog Boulevard, right D F Malan Street, left Table Bay Boulevard, left Hereengracht, right Walter Sisulu Avenue, left Lower Long Street, continue Long Street, left Orange Street, continue Annandale Road, continue Mill Street, left Mill Street off ramp, Gardens Station, right Maynard Street, right Mill Street, left Upper Buitenkant Street, continue Highlands Avenue, left Exner Avenue, right Davenport Road, left St James Street, left Derry Street, right Noordelik Avenue, left Gardenia Avenue, right Derry Street, continue Upper Mill Street, continue Mill Street, Gardens Station, Continue Mill Street, continue Annandale Road, continue Orange Street, continue Buitensingel, right Loop Street, continue Lower Long Street, right Walter Sisulu Avenue, left Hereengracht, right Table Bay Boulevard, right D F Malan Street, left Hertzog Boulevard, Civic Centre Station
102	Salt River Rail Station - Walmer Estate - Civic Centre	Salt River Station, continue Foundry Road, exit Voortrekker Road, continue Salt River Road via Salt River circle, right Victoria Road, left Roodebloem Road, continue Upper Roodebloem Road, right Rhodes Avenue, right Upper Mountain Road, left Chester Road, continue Keizersgracht, continue Darling Street, right Adderley Street, continue Heerengracht, right Hertzog Boulevard, Civic Centre Station
103	Oranjezicht - Gardens - Civic Centre	Civic Centre Station, continue Hertzog Boulevard, left Heerengracht, continue Adderley Street, left Darling Street, right Buitenkant Street, left Mill Street, Gardens Station, right Maynard Street, right Mill Street, continue Mill Street, left Upper Orange Street, right Montrose Avenue, right Molteno Road, left Rayden Street, left Hof Street, right Kloof Street, right Camp Street, left Upper Orange Street, right Annandale Road, continue Mill Street, left Mill Street off ramp, Gardens Station, right Maynard Street, right Mill Street, right Buitenkant Street, left Darling Street, right Adderley Street, continue Heerengracht, right Hertzog Boulevard, Civic Centre Station
104	Sea Point - Waterfront - Civic Centre	Queens Beach Station, continue Beach Road to Mouille Point, left Beach Road, left Granger Bay Boulevard, right Granger Bay Road, left Breakwater Boulevard, Waterfront, u-turn at circle, continue Breakwater Boulevard, left Port Road, right Dock Road, left South Arm Road, u-turn at circle, continue South Arm Road south, continue Walter Sisulu Avenue, left Hereengracht, right Table Bay Boulevard, right D F Malan Street, left Hertzog Boulevard, Civic Centre

Route No.	Route Title	Route Description
		Station
105	Sea Point - Fresnaye Civic Centre	Queens Beach Station, continue Beach Road, left Queens Road via Queens Beach circle, left Kloof Road, right Avenue Disandt, left High Level Road, continue Strand Street, left Adderley Street, continue Heerengracht, right Hertzog Boulevard, Civic Centre Station
106	Civic Centre-Camps Bay (clockwise)	Civic Centre Station, u-turn on busway, continue Hertzog Boulevard west, left Heerengracht, continue Adderley Street, right Wale Street, left Long Street, continue Kloof Street, right Kloof Nek Road, left Kloof Nek Road, continue Camps Bay Drive, left Prima Avenue, continue Platteklip Plein, right Ravensteyn Road, left Camps Bay Drive, left Fiskaal Road, continue Chas Booth Avenue, right Rontree Avenue, left Camps Bay Drive, right Victoria Road, right Argyle Street, continue Tree Road, left Geneva Drive, left Camps Bay Drive, continue Kloof Nek Road, right Kloof Nek Road, left Kloof Street, left Buitensingel, right Loop Street, right Wale Street, left Adderley Street, continue Heerengracht, right Hertzog Boulevard, Civic Centre Station.
107	Civic Centre-Camps Bay (anti-clockwise)	Civic Centre Station, u-turn on busway, continue Hertzog Boulevard west, left Heerengracht, continue Adderley Street, right Wale Street, left Long Street, continue Kloof Street, right Kloof Nek Road, left Kloof Nek Road, continue Camps Bay Drive, right Geneva Drive, right Tree Road, continue Argyle Street, left Victoria Road, left Camps Bay Drive, continue Kloof Nek Road, right Kloof Nek Road, left Kloof Street, left Buitensingel, right Loop Street, right Wale Street, left Adderley Street, continue Heerengracht, right Hertzog Boulevard, Civic Centre Station.
108	Hangberg-Sea Point-Adderley	Hangberg stop, continue Karbonkel Road east, left Atlantic Skipper Road, left Harbour Road, left Victoria Avenue, continue Victoria Road through Camps Bay, left Queens Road, right Regent Street, left Solomons Road, left Beach Road, Queens Beach Station, left Queens Road via Queens Beach Circle, left Regent Street, continue Main Road, continue Somerset Road, continue Riebeek Street, left Adderley Street, Adderley Station.
109	Hout Bay-Imizamo Yethu-Sea Point-Adderley	Hout Bay terminus, left The Promenade, left Main Road, continue to Imizamo Yethu, right Hector Petersen Ave, right to Hector Petersen terminus, left Hector Petersen Ave, left Main Road, right Victoria Road towards Camps Bay, continue towards Sea Point, left Queens Road, right Regent Street, left Solomons Road, left Beach Road, Queens Beach Station, left Queens Road via Queens Beach Circle, left Regent Street, continue Main Road, continue Somerset Road, continue Riebeek Street, left Adderley Street, Adderley Station
110	Table Mountain	Stop at parking area at Kloof Nek Road, continue Tafelberg Road to stop at Lower Cableway station.
213	West Beach - Table View - Sunningdale	Blaauwberg Hospital, continue Waterville Street east, right Sunningdale Drive, right Garden Drive, left Link Road, left Parklands Main Road, continue Raats Drive, right Blaauwberg Road, Table View Station, continue Blaauwberg Road west, right Marine Circle, right Viola Road, left Watsonia Road, right Stirling Road, right Drummond Road, right Warwick Road, left Sandown Road, continue Tryall Road, right Sunningdale Drive, right Waterville Street, Blaauwberg Hospital
214	Parklands- Table View - Marine Circle	Traffic circle at future Koeberg Road, continue Parklands Main Road, continue Raats Drive, right Blaauwberg Road, Table View Station, continue Blaauwberg Road to Marine circle.
215	Sunningdale - Gie Road - Wood	Blaauwberg Hospital, right Sunningdale Drive, left Sandown Road, left Wood Drive, u-turn at circle, Parklands Secondary, continue Wood Drive, left Sandown Road, right Gie Road, left Cross Road, left Circle Road, right Merlot Avenue, left Wood Drive, left Blaauwberg Road, Wood Station
216	Sunningdale - Wood Drive - Wood	Blaauwberg Hospital, right Sunningdale Drive, left Humewood Drive, left Ringwood Drive, right Wood Drive, left Blaauwberg Road, Wood Station
217	Table View - Big Bay - Melkbosstrand	Table View Station, continue Blaauwberg Road, right Otto Du Plessis Drive, left Sir David Baird Drive, left to stop at Big Bay parking area, right to Sir David Baird Drive, left Sir David Baird Drive, left Otto Du Plessis Drive, continue Otto Du Plessis Drive, Melkbosstrand Station, continue Otto Du Plessis Drive, continue Melkbosstrand Road, left into Melkbosch Village to circle.
230	Duynefontein - Melkbosstrand	Melkbosplaas turnaround, continue Waratah Way west, continue Birkenhead Drive, left to turn around on Brittlestar Drive, continue to Birkenhead Drive, left Birkenhead Drive, right Otto Du Plessis Drive, Melkbosstrand Station, continue Otto Du Plessis Drive north, left Otto Du Plessis Drive, left Charles Hoffe Avenue, right Dunker Street, left onto Otto Du Plessis Drive, continue on Narcissus Avenue, turn left onto Napoleon Avenue, right Samuel Crescent, left Atlantic Avenue, right onto Otto Du Plessis Drive, left Dunker Street, left Charles Hoffe Avenue, right Otto Du Plessis Drive, right Otto Du Plessis Drive,

Route No.	Route Title	Route Description
		Melkbosstrand Station, continue Otto Du Plessis Drive, left Birkenhead Drive, right to turn around on Brittlestar Drive, continue to Birkenhead Drive, right Birkenhead Drive, continue Waratah Way, Melkbosplaas turnaround
231	Atlantis - Atlantis Industria East	Atlantis Station, continue Reygersdal Drive south, right Charel Uys Drive, left Neil Hare Road, right Louwtjie Rothman to Louwtjie Rothman terminus
232	Atlantis - Avondale - Protea Park - Atlantis Industria West	Atlantis Station, continue Reygersdal Drive south, right Meermin Road, right Palmer Avenue, left Grosvenor Avenue, continue Gardenia Street, right Kerria Avenue, left Charel Uys Drive, right Christopher Starke Street, left Tom Henshilwood Street, right Neil Hare Road, left Charel Uys Drive, right Johan van Niekerk Street to Charles Matthews stop, left Charles Mathews Street, left Juan Hampshire Place (turn-around), right Charles Mathews, right Johan van Niekerk Street.
233	Atlantis-Saxonsea	Drive west, right Grosvenor Avenue, left Hermes Avenue, right Kent Crescent, left Hermes Avenue, right Grosvenor Avenue, left Reygersdal Drive, Atlantis Station
234	Atlantis - Mamre	Atlantis Station, continue Reygersdal Drive west, right Arion Drive, left Charel Uys Drive, continue Dassenberg Road, left Silverstream Road, right Poiet Street, continue Lord Somerset Street, left Main Road, left Enon Street, left Crown Lane, left Palm Lane, left Paradise Lane, continue Seemeeu Street, right Sand Street, right Goedververwacht Street, right Main Road, right Lord Somerset Street, continue Poiet Street, left Silverstream Road, right Dassenberg Road, continue Charel Uys Drive, right Arion Drive, left Reygersdal Drive, Atlantis Station
235	Atlantis - Pella	Atlantis Station, continue Reygersdal Drive west, right Arion Drive, left Charel Uys Drive, right Pella Road, left Pella Road, Pella Terminus
236	Atlantis - Sherwood	Atlantis Station, continue Reygersdal Drive west, right Arion Drive, left Anna Avenue, right Brutus Avenue, continue Sherwood Road, left Newlands Road, turn right onto Knysna Road, continue on Sherwood Road, continue Brutus Avenue, left Anna Avenue, right Arion Drive, left Reygersdal Drive, Atlantis Station
237	Atlantis-Robinvale	Atlantis Station, continue Reygersdal Drive south, left Meermin Road, continue Wesfleur Circle, right Sampson Road, right Curlew Street, left Starling Road, left Fiskaal Street, right Curlew Street, left Sampson Road, left Wesfleur Circle, continue Meermin Road, right Reygersdal Drive, Atlantis Station
238	Atlantis-Witsands	Atlantis Station, continue Reygersdal Drive south, right Bloembosch Road, right un-named road, right un-named road, left Reygersdal Drive, Atlantis Station
239	Atlantis - Duynefontein - Melkbosstrand	Atlantis Station, continue Reygersdal Drive east, right Charel Uys Drive, left Dassenbeg Road, left West Coast Road, right Access Road to Duynefontein, right Napoleon Avenue, continue Atlantic Avenue, right Otto Du Plessis Drive, left Dunker Street, left Charles Hoffe Avenue, right Otto Du Plessis Drive, Melkbosstrand Station, continue Otto Du Plessis Drive, left Birkenhead Drive, right to turn around on Brittlestar Drive, continue to Birkenhead Drive, right Birkenhead Drive, continue Waratah Way, Melkbosplaas turnaround
251	Montague Gardens - Century City	Omuramba Station, continue Racecourse Road east, left Omuramba Road, right Koeberg Road, right Montague Drive, continue Century Avenue, left Century Boulevard, right Century Way, Century City Public Transport Interchange, continue Century Way north, left Century Link, left Ratanga Road, left Sable Road, Century City Rail Station
Route No.	**Route Title**	**Route Description**
Trunk Services – Dedicated Median operations		
A01	Airport - Civic Centre	Airport Terminal, continue Airport Approach Road, continue N2, left Nelson Mandela Boulevard, continue Hertzog Boulevard, u-turn on busway, continue Hertzog Boulevard, Civic Centre Station
T01	Du Noon - Table View - Civic Centre - Waterfront	Usasaza Station, continue Potsdam Road south, right Blaauwberg Road, Tableview Station, continue Blaauwberg Road, left Marine Drive, left Milner Street, continue Paarden Eiland busway, continue Culemborg bus lane, continue Hertzog Boulevard, Civic Centre Station, continue Hertzog Boulevard, left Heerengracht, right Hans Strijdom Avenue, continue Western Boulevard, right Granger Bay Boulevard, right Granger Bay Road, left Breakwater Boulevard,

Route No.	Route Title	Route Description
		Waterfront Station
T02	Atlantis - Table View - Civic Centre	Atlantis Station, continue Reygersdal Drive west, left Dassenbeg Road, left West Coast Road, right Melkbosstrand Road, continue Otto Du Plessis Drive, Melkbosstrand Station, left Birkenhead Drive, right West Coast Road, left Blaauwberg Road, Tableview Station, continue Blaauwberg Road east, u-turn, continue Blaauwberg Road west, left Marine Drive, left Milner Street, continue Paarden Eiland busway, continue Culemborg bus lane, continue Hertzog Boulevard, Civic Centre Station
T03	Atlantis - Table View - Century City	Atlantis Station, continue Reygersdal Drive east, right Charel Uys Drive, left Dassenbeg Road, left West Coast Road, right Melkbosstrand Road, continue Ottu Du Plessis Drive, Melkbosstrand Station, left Birkenhead Drive, right West Coast Road, left Blaauwberg Road, Tableview Station, continue Blaauwberg Road east, u-turn, continue Blaauwberg Road west, left Marine Drive, left Racecourse Road, right Omuramba Road, continue Ratanga Road, left Century Link, right Century Way, Century City Public Transport Terminus
Feeder Services: Type – Kerbside, mixed traffic conditions		
101	Vredehoek - Gardens - Civic Centre	Civic Centre Station, u-turn on busway, continue Hertzog Boulevard, right D F Malan Street, left Table Bay Boulevard, left Hereengracht, right Walter Sisulu Avenue, left Lower Long Street, continue Long Street, left Orange Street, continue Annandale Road, continue Mill Street, left Mill Street off ramp, Gardens Station, right Maynard Street, right Mill Street, left Upper Buitenkant Street, continue Highlands Avenue, left Exner Avenue, right Davenport Road, left St James Street, left Derry Street, right Noordelik Avenue, left Gardenia Avenue, right Derry Street, continue Upper Mill Street, continue Mill Street, Gardens Station, Continue Mill Street, continue Annandale Road, continue Orange Street, continue Buitensingel, right Loop Street, continue Lower Long Street, right Walter Sisulu Avenue, left Hereengracht, right Table Bay Boulevard, right D F Malan Street, left Hertzog Boulevard, Civic Centre Station
102	Salt River Rail Station - Walmer Estate - Civic Centre	Salt River Station, continue Foundry Road, exit Voortrekker Road, continue Salt River Road via Salt River circle, right Victoria Road, left Roodebloem Road, continue Upper Roodebloem Road, right Rhodes Avenue, right Upper Mountain Road, left Chester Road, continue Keizersgracht, continue Darling Street, right Adderley Street, continue Heerengracht, right Hertzog Boulevard, Civic Centre Station
103	Oranjezicht - Gardens - Civic Centre	Civic Centre Station, continue Hertzog Boulevard, left Heerengracht, continue Adderley Street, left Darling Street, right Buitenkant Street, left Mill Street, Gardens Station, right Maynard Street, right Mill Street, continue Mill Street, left Upper Orange Street, right Montrose Avenue, right Molteno Road, left Rayden Street, left Hof Street, right Kloof Street, right Camp Street, left Upper Orange Street, right Annandale Road, continue Mill Street, left Mill Street off ramp, Gardens Station, right Maynard Street, right Mill Street, right Buitenkant Street, left Darling Street, right Adderley Street, continue Heerengracht, right Hertzog Boulevard, Civic Centre Station
104	Sea Point - Waterfront - Civic Centre	Queens Beach Station, continue Beach Road to Mouille Point, left Beach Road, left Granger Bay Boulevard, right Granger Bay Road, left Breakwater Boulevard, Waterfront, u-turn at circle, continue Breakwater Boulevard, left Port Road, right Dock Road, left South Arm Road, u-turn at circle, continue South Arm Road south, continue Walter Sisulu Avenue, left Hereengracht, right Table Bay Boulevard, right D F Malan Street, left Hertzog Boulevard, Civic Centre Station
105	Sea Point - Fresnaye Civic Centre	Queens Beach Station, continue Beach Road, left Queens Road via Queens Beach circle, left Kloof Road, right Avenue Disandt, left High Level Road, continue Strand Street, left Adderley Street, continue Heerengracht, right Hertzog Boulevard, Civic Centre Station
106	Civic Centre-Camps Bay (clockwise)	Civic Centre Station, u-turn on busway, continue Hertzog Boulevard west, left Heerengracht, continue Adderley Street, right Wale Street, left Long Street, continue Kloof Street, right Kloof Nek Road, left Kloof Nek Road, continue Camps Bay Drive, left Prima Avenue, continue Platteklip Plein, right Ravensteyn Road, left Camps Bay Drive, left Fiskaal Road, continue Chas Booth Avenue, right Rontree Avenue, left Camps Bay Drive, right Victoria Road, right Argyle Street, continue Tree Road, left Geneva Drive, left Camps Bay Drive, continue Kloof Nek Road, right Kloof Nek Road, left Kloof Street, left Buitensingel, right Loop Street, right Wale Street, left Adderley Street, continue Heerengracht, right Hertzog Boulevard, Civic Centre Station.
107	Civic Centre-Camps Bay (anti-clockwise)	Civic Centre Station, u-turn on busway, continue Hertzog Boulevard west, left Heerengracht, continue Adderley Street, right Wale Street, left Long Street, continue Kloof Street, right Kloof Nek Road, left Kloof Nek Road, continue Camps Bay Drive, right Geneva Drive, right Tree Road, continue Argyle Street, left Victoria Road, left Camps Bay Drive, continue Kloof Nek Road, right Kloof Nek Road, left Kloof Street, left Buitensingel, right Loop Street, right Wale Street,

Route No.	Route Title	Route Description
		left Adderley Street, continue Heerengracht, right Hertzog Boulevard, Civic Centre Station.
108	Hangberg-Sea Point-Adderley	Hangberg stop, continue Karbonkel Road east, left Atlantic Skipper Road, left Harbour Road, left Victoria Avenue, continue Victoria Road through Camps Bay, left Queens Road, right Regent Street, left Solomons Road, left Beach Road, Queens Beach Station, left Queens Road via Queens Beach Circle, left Regent Street, continue Main Road, continue Somerset Road, continue Riebeek Street, left Adderley Street, Adderley Station.
109	Hout Bay-Imizamo Yethu-Sea Point-Adderley	Hout Bay terminus, left The Promenade, left Main Road, continue to Imizamo Yethu, right Hector Petersen Ave, right to Hector Petersen terminus, left Hector Petersen Ave, left Main Road, right Victoria Road towards Camps Bay, continue towards Sea Point, left Queens Road, right Regent Street, left Solomons Road, left Beach Road, Queens Beach Station, left Queens Road via Queens Beach Circle, left Regent Street, continue Main Road, continue Somerset Road, continue Riebeek Street, left Adderley Street, Adderley Station
110	Table Mountain	Stop at parking area at Kloof Nek Road, continue Tafelberg Road to stop at Lower Cableway station.
213	West Beach - Table View - Sunningdale	Blaauwberg Hospital, continue Waterville Street east, right Sunningdale Drive, right Garden Drive, left Link Road, left Parklands Main Road, continue Raats Drive, right Blaauwberg Road, Table View Station, continue Blaauwberg Road west, right Marine Circle, right Viola Road, left Watsonia Road, right Stirling Road, right Drummond Road, right Warwick Road, left Sandown Road, continue Tryall Road, right Sunningdale Drive, right Waterville Street, Blaauwberg Hospital
214	Parklands- Table View - Marine Circle	Traffic circle at future Koeberg Road, continue Parklands Main Road, continue Raats Drive, right Blaauwberg Road, Table View Station, continue Blaauwberg Road to Marine circle.
215	Sunningdale - Gie Road - Wood	Blaauwberg Hospital, right Sunningdale Drive, left Sandown Road, left Wood Drive, u-turn at circle, Parklands Secondary, continue Wood Drive, left Sandown Road, right Gie Road, left Cross Road, left Circle Road, right Merlot Avenue, left Wood Drive, left Blaauwberg Road, Wood Station
216	Sunningdale - Wood Drive - Wood	Blaauwberg Hospital, right Sunningdale Drive, left Humewood Drive, left Ringwood Drive, right Wood Drive, left Blaauwberg Road, Wood Station
217	Table View - Big Bay - Melkbosstrand	Table View Station, continue Blaauwberg Road, right Otto Du Plessis Drive, left Sir David Baird Drive, left to stop at Big Bay parking area, right to Sir David Baird Drive, left Sir David Baird Drive, left Otto Du Plessis Drive, continue Otto Du Plessis Drive, Melkbosstrand Station, continue Otto Du Plessis Drive, continue Melkbosstrand Road, left into Melkbosch Village to circle.
230	Duynefontein - Melkbosstrand	Melkbosplaas turnaround, continue Waratah Way west, continue Birkenhead Drive, left to turn around on Brittlestar Drive, continue to Birkenhead Drive, left Birkenhead Drive, right Otto Du Plessis Drive, Melkbosstrand Station, continue Otto Du Plessis Drive north, left Otto Du Plessis Drive, left Charles Hoffe Avenue, right Dunker Street, left onto Otto Du Plessis Drive, continue on Narcissus Avenue, turn left onto Napoleon Avenue, right Samuel Crescent, left Atlantic Avenue, right onto Otto Du Plessis Drive, left Dunker Street, left Charles Hoffe Avenue, right Otto Du Plessis Drive, right Otto Du Plessis Drive, Melkbosstrand Station, continue Otto Du Plessis Drive, left Birkenhead Drive, right to turn around on Brittlestar Drive, continue to Birkenhead Drive, right Birkenhead Drive, continue Waratah Way, Melkbosplaas turnaround
231	Atlantis - Atlantis Industria East	Atlantis Station, continue Reygersdal Drive south, right Charel Uys Drive, left Neil Hare Road, right Louwtjie Rothman to Louwtjie Rothman terminus
232	Atlantis - Avondale - Protea Park - Atlantis Industria West	Atlantis Station, continue Reygersdal Drive south, right Meermin Road, right Palmer Avenue, left Grosvenor Avenue, continue Gardenia Street, right Kerria Avenue, left Charel Uys Drive, right Christopher Starke Street, left Tom Henshilwood Street, right Neil Hare Road, left Charel Uys Drive, right Johan van Niekerk Street to Charles Matthews stop, left Charles Mathews Street, left Juan Hampshire Place (turn-around), right Charles Mathews, right Johan van Niekerk Street.
233	Atlantis-Saxonsea	Drive west, right Grosvenor Avenue, left Hermes Avenue, right Kent Crescent, left Hermes Avenue, right Grosvenor Avenue, left Reygersdal Drive, Atlantis Station

Route No.	Route Title	Route Description
234	Atlantis - Mamre	Atlantis Station, continue Reygersdal Drive west, right Arion Drive, left Charel Uys Drive, continue Dassenberg Road, left Silverstream Road, right Poiet Street, continue Lord Somerset Street, left Main Road, left Enon Street, left Crown Lane, left Palm Lane, left Paradise Lane, continue Seemeeu Street, right Sand Street, right Goedververwacht Street, right Main Road, right Lord Somerset Street, continue Poiet Street, left Silverstream Road, right Dassenberg Road, continue Charel Uys Drive, right Arion Drive, left Reygersdal Drive, Atlantis Station
235	Atlantis - Pella	Atlantis Station, continue Reygersdal Drive west, right Arion Drive, left Charel Uys Drive, right Pella Road, left Pella Road, Pella Terminus
236	Atlantis - Sherwood	Atlantis Station, continue Reygersdal Drive west, right Arion Drive, left Anna Avenue, right Brutus Avenue, continue Sherwood Road, left Newlands Road, turn right onto Knysna Road, continue on Sherwood Road, continue Brutus Avenue, left Anna Avenue, right Arion Drive, left Reygersdal Drive, Atlantis Station
237	Atlantis-Robinvale	Atlantis Station, continue Reygersdal Drive south, left Meermin Road, continue Wesfleur Circle, right Sampson Road, right Curlew Street, left Starling Road, left Fiskaal Street, right Curlew Street, left Sampson Road, left Wesfleur Circle, continue Meermin Road, right Reygersdal Drive, Atlantis Station
238	Atlantis-Witsands	Atlantis Station, continue Reygersdal Drive south, right Bloembosch Road, right un-named road, right un-named road, left Reygersdal Drive, Atlantis Station
239	Atlantis - Duynefontein - Melkbosstrand	Atlantis Station, continue Reygersdal Drive east, right Charel Uys Drive, left Dassenbeg Road, left West Coast Road, right Access Road to Duynefontein, right Napoleon Avenue, continue Atlantic Avenue, right Otto Du Plessis Drive, left Dunker Street, left Charles Hoffe Avenue, right Otto Du Plessis Drive, Melkbosstrand Station, continue Otto Du Plessis Drive, left Birkenhead Drive, right to turn around on Brittlestar Drive, continue to Birkenhead Drive, right Birkenhead Drive, continue Waratah Way, Melkbosplaas turnaround
251	Montague Gardens - Century City	Omuramba Station, continue Racecourse Road east, left Omuramba Road, right Koeberg Road, right Montague Drive, continue Century Avenue, left Century Boulevard, right Century Way, Century City Public Transport Interchange, continue Century Way north, left Century Link, left Ratanga Road, left Sable Road, Century City Rail Station

Phase 1B route descriptions

Route No.	Type	Route Title	Route Description
TRUNK			
T04	Dedicated, Median	Du Noon to Century City via Montague Gardens	*Forward*: Usasaza Station, continue Potsdam Road, continue Koeberg Road, left Racecourse Road, right Omuramba Road, continue Ratanga Road, left Century Boulevard, left Century Way, Century City Public Transport Interchange. *Return*: Century City Public Transport Interchange, continue Century Way north, left Century Link, right Ratanga Road, continue Omuramba Road, left Racecourse Road, right Koeberg Road, continue Potsdam Road, Usasaza Station.
FEEDERS (under review)			
260	Mixed traffic, kerbside	Richwood to Century City	Jonkershoek Road at service station, continue Jonkershoek Road west, right Baines Road, right Rustenburg Road, left Midwood Avenue, right Richwood Avenue, left Helderberg Road, right Annandale Drive, continue Indigo Drive, right Carmine Drive, right Burgundy Drive, left Tygerberg Road, continue De Grendel Avenue, right Meerhof Street, left Adam Tas Avenue, right Vryburger Avenue, right Bosmansdam Road, left Century Avenue, left Century Gate Station, left Century Avenue, left Century Boulevard, right Century Way to Century City Public Transport Terminus.
261	Priority Lanes where required, kerbside	Maitland to Montague Gardens	Maitland rail station, continue Ferndale Drive east, left Voortrekker Road, right Koeberg Road, right Freedom Way, left Omuramba Road, left Racecourse Road, Omuramba Station.

Route No.	Type	Route Title	Route Description
262	Mixed traffic, kerbside	Bothasig to Woodbridge Island	De Grendel Avenue at service station, right Steenhoven Street, right Vryburger Avenue, left Boom Street, left Kasteel Street, right Coornhoop Street, right Bosmansdam Road, left Koeberg Road, right Loxton Road, continue Woodbridge Drive to roundabout.
264	Mixed traffic, kerbside	Summer Greens to Century City	Shearer Green, right Lodger Road, left Summer Greens Drive, left Century Avenue, left Century Gate Station, left Century Avenue, right Century Boulevard, left Century Way, Century City Public Transport Terminus, continue Century Way south, right Century Boulevard, left Ratanga Road, left Sable Road, Century City Rail Station.
265	Mixed traffic, kerbside	Edgemead to Potsdam	Edgemead shopping centre, left Letchworth Drive, continue Coornhoop Street, right Kasteel Street, left Wyland Road, left Vryburger Avenue, right De Grendel Avenue, left Plattekloof Road, right Koeberg Road, left Potsdam PTI.

N2 Express Service route descriptions

Route No.	Type	Route Title	Route Description
D01	Express service using N2 BMT inbound lane	Khayelitsha East to Cape Town (Civic Centre)	Kuyasa South Public Transport Interchange, left Ntlazane Road, right unnamed road, left Lindela Street, left Lansdowne Road, right Spine Road, left N2, left Hertzog Boulevard, Civic Centre Station.
D02 *(under review)*	Express service using N2 BMT inbound lane	Khayelitsha West to Cape Town (Civic Centre)	Kuyasa South Public Transport Interchange, right Ntlazane Road, left Spine Road, right Mew Way, left N2, left Hertzog Boulevard, Civic Centre Station.
D03	Express service using N2 BMT inbound lane	Mitchells Plain East to Cape Town (Civic Centre)	Mitchells Plain Town Centre Bus Terminus, continue First Avenue north, right Wespoort Drive, left A.Z. Berman Drive, right R300, left N2, left Hertzog Boulevard, Civic Centre Station.
D04 *(under review)*	Express service using N2 BMT inbound lane	Kapteinsklip to Cape Town (Civic Centre)	Kapteinsklip rail station, continue Yellowwood Street north, right Kilimanjaro Street, left A.Z. Berman Drive, right R300, left N2, left Hertzog Boulevard, Civic Centre Station.

Annexure E. Costs of Phase 1 and N2 Express in Current (Escalated) Rands

This appendix shows costs and revenues which have been escalated to show figures in current Rands, in other words projected costs in the particular year.

Costs have been generally escalated at 6.5% assumed to be the estimated rate of inflation based on an assumption of CPI. Other specific escalation rates were assumed where this is covered by contractual provisions as follows:

- Station Management Services escalated at 7%. The contract provides for escalation in labour rates which are likely to exceed CPI and therefore a higher figure was used.
- The VOC contract includes escalation formulae for each of the payment components in the pricing mechanism which cover a mix of indices namely CPI, PPI, diesel prices, tyre costs, electricity costs, and labour costs as determined by SARPBAC. The escalation rates for the four components of payment are in the range of 7% to 9%. The higher rate is used where the impact of labour costs and diesel costs are more significant since these two components are likely to increase at a higher rate than CPI. Some items included in the VOC contracts in the initial years are not escalated at all, however, with the result that the overall escalation in VOC costs in the years shown in this Business Plan are projected to be lower than 8%.
- Fare revenue was escalated at 8% annually which more closely matches the expected increase in VOC costs.

The tables below show costs and revenues in current (i.e. escalated) Rands first for Phase 1, N2 Express, and thereafter for Phase 1 and N2 Express combined.

Table J.1.1: Phase 1 Costs in current Rands (escalated)

PHASE 1 R 000's Current Rands	FY 15/16	FY 16/17	FY 17/18
	PHASE 1	PHASE 1	PHASE 1
SYSTEM REVENUE	**264 158**	**288 500**	**311 277**
Fare revenue	228 042	249 785	269 767
Advertising	12 805	13 637	14 523
Other revenue	23 311	25 079	26 987
SYSTEM COSTS	**678 520**	**726 705**	**777 462**
Contracted Services	**541 353**	**581 694**	**624 098**
VO contracts	402 232	434 137	462 337
APTMS operations	12 835	13 669	14 558
Fare system operations	26 163	26 756	32 572
Station services	100 124	107 132	114 632
Operations Unit & Marketing	**82 005**	**87 335**	**93 012**
Operations Management Service	62 835	66 919	71 269
Marketing and communications	19 170	20 416	21 743
Law enforcement services	**36 860**	**39 256**	**41 808**
Law enforcement (current & additional enforcement minibus-taxis)	21 963	23 390	24 910
Security SSU	13 300	14 165	15 085
Minibus-taxi monitoring	1 598	1 701	1 812
Other City Costs	**18 302**	**18 419**	**18 544**
Insurance	16 494	16 494	16 494
Major maintenance	1 701	1 812	1 930
Transport information	106	113	121
Deficit before funding: System revenue minus system costs	**-414 362**	**-438 204**	**-466 184**

Table J.1.2: N2 Express Costs in current Rands (escalated)

N2 EXPRESS R 000's Current Rands	FY 15/16	FY 16/17	FY 17/18
	N2 EXPRESS	N2 EXPRESS	N2 EXPRESS
SYSTEM REVENUE	**25 920**	**29 160**	**31 493**
Fare revenue	25 920	29 160	31 493
Advertising	0	0	0
Other revenue	0	0	0
SYSTEM COSTS	**115 854**	**124 538**	**134 616**
			0
Contracted Services	**84 852**	**91 678**	**99 777**
VO contracts	78 298	84 841	91 938
APTMS operations	1 734	1 847	1 967
Fare system operations	3 536	3 616	4 402
Station services	1 284	1 374	1 470
Operations Service & Marketing	**6 390**	**6 805**	**7 248**
Operations Management Services	0	0	0
Marketing & communications	6 390	6 805	7 248
Law enforcement services	**21 963**	**23 390**	**24 910**
Law enforcement (current & additional enforcement re minibus-taxis)	21 963	23 390	24 910
Security SSU	0	0	0
Minibus-taxi monitoring	0	0	0
Other City Costs	**2 649**	**2 665**	**2 681**
Insurance	2 408	2 408	2 408
Major maintenance	227	242	257
Transport information	14	15	16
Deficit before funding: System revenue minus system costs	**-89 934**	**-95 378**	**-103 124**

Table J.1.3 Phase 1 and N2 Express Costs in current Rands (escalated)

PHASE 1 & N2 EXPRESS R 000's Current Rands	FY 2015/16	FY 16/17	FY 17/18
	TOTAL	TOTAL	TOTAL
SYSTEM REVENUE	**290 078**	**317 660**	**342 770**
Fare revenue	253 962	278 945	301 260
Advertising	12 805	13 637	14 523
Other revenue	23 311	25 079	26 987
SYSTEM COSTS	**794 373**	**851 243**	**912 078**
			0
Contracted Services	**626 205**	**673 372**	**723 875**
VO contracts	480 530	518 978	554 275
APTMS operations	14 569	15 516	16 525
Fare system operations	29 698	30 372	36 974
Station services	101 408	108 506	116 102
Operations Service & Marketing	**88 395**	**94 141**	**100 260**
Operations Management Services	62 835	66 919	71 269
Marketing & communications	25 560	27 221	28 991
Law enforcement services	**58 823**	**62 646**	**66 718**
Law enforcement(current & additional enforcement re minibus-taxis)	43 925	46 780	49 821
Security SSU	13 300	14 165	15 085
Minibus-taxi monitoring	1 598	1 701	1 812
Other City Costs	**20 951**	**21 084**	**21 226**
Insurance	18 902	18 902	18 902
Major maintenance	1 928	2 054	2 187
Transport information	121	128	137
Deficit before funding: System revenue minus system costs	**-504 295**	**-533 582**	**-569 308**

Annexure F

Making MyCiTi financially sustainable

Projected operating deficit scenarios for completed MyCiTi system and strategies for operating deficit reduction and financial risk management

Draft v2.2
Business Development Branch
TCT Planning Department
Transport for Cape Town
City of Cape Town

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Table of Contents

1. Introduction

1.1 Purpose of the document

This document examines the long term operational costs of the MyCiTi system assuming full rollout across Cape Town. It identifies potential deficit implications as well as key risks and strategies for managing them to ensure financial sustainability[1].

When the MyCiTi project was initially embarked upon it was not envisaged that operating costs would be as high as has now become evident. This study is based on applying the actual operating costs as negotiated in Phase 1 of the project, to anticipated demand and supply as predicted by the latest available transport demand modelling for the whole metropolitan area. Key variables are identified and these are then adjusted to examine under which conditions the system is likely to be financially viable.

Full roll-out means extending the MyCiTi system across the metropolitan wide road based public transport network. This includes incorporating and, over time, refashioning the current Golden Arrow Bus Services (GABS) as well as the Phase 1 MyCiTi design so as to create a single road based system based on adjusted MyCiTi designs. It also includes replacing to a greater or lesser degree the minibus taxi industry, as has been done in Phase 1. It is envisaged that existing service providers such as GABS and the minibus taxi operators form companies to operate the MyCiTi services for an initial period as provided for in legislation, after which services will be procured through competitive tendering.

MyCiTi does not replace rail, but integrates with it to form a multi-modal, integrated rapid public transport service.

The study demonstrates that extending the MyCiTi system across the metropolitan area based on the same design as was initially envisaged in 2010 is not financially sustainable. However, based on a number of design and service changes as well as demand management measures the system can be sustainable.

Achieving long-term sustainability requires that the City implement a range of actions under its control. Whilst short term actions may relate more to optimisation of existing services through moderation type processes and implementing lessons learned during planning, rollout and operations; it is important that the City also prioritises measures to improve the passenger demand profile over the medium – long term through adopting a pro-TDM and pro-TOD policy approach and developing supporting tools and mechanisms to achieve these outcomes. It is critically important that key decisions around public investment, housing and major development applications reflect these desired policy outcomes.

However, control over some of the key requirements for financial sustainability lies with national government. Achieving a financially sustainable MyCiTi system thus requires a partnership approach between the City of Cape Town and, in particular, national government. This includes setting clear fiscal parameters and a partnership approach to the management of risks.

As with the introduction of any new system, knowledge improves over time. This document is based on information available as of late 2013. The City is currently undertaking a project to design an Integrated Rapid Public Transport Network (IPTN), the results of which should be available in mid 2014, enabling a refinement of the transport modelling. Further information on actual system costs will become available as Phase 1 implementation continues. Revenue expectations will also need to be refined based on actual experience with Phase 1 implementation.

[1] This document was drafted by Philip van Ryneveld, with modelling by John Spotten, under the direction and with extensive input from Peter Grey, Dawie Bosch, Maddie Mazaza and Melissa Whitehead. It also and benefited from comments and suggestions from Vernon Moonsamy, Gershwin Fortune, Jedd Grimbeck, Dave Hugo and Abdul Bassier, Jedd Grimbeck and Dave Hugo.

1.2 Outline of document

The document begins by assessing the implications of extending MyCiTi across the metropolitan area based on the same design as was initially envisaged in 2010 and assuming the continuation of demand patterns as existed at that time. In examining this first scenario the key variables that are applied – and that are to be adjusted in subsequent scenarios – are explained.

The financial results are first presented excluding any subsidies. This is followed by an explanation of the subsidy framework as contained in the Division of Revenue Act (2013) together with the extent of subsidisation the City of Cape Town has agreed to from its own resources. Subsidy levels calculated on this basis are then explained and applied to Scenario 1, demonstrating that even with such subsidisation the system envisaged in this way is not sustainable.

The following sections describe in turn a further five scenarios aimed at exploring under which conditions the system is financially feasible.

In the course of implementing Phase 1 of MyCiTi a number of potential improvements have been identified which can be applied to future phases to improve financial viability. Scenario Two incorporates these initial improvements. It is referred to as the 'Improved Comprehensive' scenario because while it incorporates a number of identified improvements it still assumes that the current minibus taxi industry is to be comprehensively replaced by the MyCiTi system. Financial sustainability is substantially improved in this scenario but the system remains well outside the bounds of affordability.

While the MyCiTi type model is efficient in addressing certain types of demand, there are some services which are more efficiently provided by the informal minibus taxi industry. In Scenario Three the envisaged footprint of the MyCiTi system is reduced leaving approximately half the current minibus taxi industry operating. Since current data shows them as providing for 35% of total public transport demand this results in informal minibus taxis continuing to provide 17.5% of total public transport demand. This is referred to as the 'Improved Hybrid' scenario. Finances are further substantially improved under this approach, but still remain unaffordable.

As will be explained in the document one of the key factors influencing sustainability is the differential between peak and off-peak demand. It is sometimes assumed that the more passengers a system carries the more financially sustainable it should be. But this is not the case. Where demand is strongly peaked substantial and expensive capacity is required to service such peaks, which then remains idle for much of the day. This is inefficient. If demand can be shifted from the peak to the off-peak periods the cost of running the service can be substantially reduced with little loss of income.

Scenarios Four and Five examine the financial results that can be achieved by shifting demand to the shoulders either side of the peak and reducing peak supply. This is achieved by providing headways on major routes of a minimum of 90 seconds in the peak. The second of these scenarios, namely the Improved Hybrid approach with peak headways capped at 90 seconds, brings the system to within the financial envelope provided for in terms of national government's current subsidy framework.

The subsidies provided for in terms of this framework are substantial, but as with any national grant, are subject to change. In Section 7 the national framework is discussed and an estimate made of what level of operational subsidies may be anticipated in the long term, based on rough international comparisons.

This is followed in Section 8 by Scenario 6 where the peak supply is further reduced, bringing costs to within affordable levels based on a substantially lower subsidy than is currently provided for in the 2013 Division of Revenue Act.

In the final sections the implications of these findings are explained, including distilling the key results, identifying key priorities in addressing system affordability, and explaining the required basis for a partnership approach with national government in order to ensure financial sustainability.

1.3 Summary of scenarios shown

Scenario 1: 2010 system design and approach

Scenario 2: Improved Comprehensive

Scenario 3: Improved Hybrid

Scenario 4: Improved Comprehensive with peak headways capped at 90 seconds

Scenario 5: Improved Hybrid with peak headways capped at 90 seconds

Scenario 6: Improved Hybrid with peak headways capped at 120 seconds

1.4 Note on modelling and year used

The transport demand modelling which determines system requirements, which are then costed to render the financial results, is based on the EMME model developed in 2010 under assumptions current at the time. It is the best city wide model available at the time of undertaking this analysis.

A new model is being developed in terms of an appointment to develop an Integrated Public Transport Network (IPTN) which should be able to offer more accurate results once completed. The 'Improved' scenarios are closer to the emerging IPTN model but based on an adaption of the 2010 EMME model.

The model is based on a 20 year time horizon, which is a feasible period for achieving full roll-out, and characterised as a 'long term' scenario.

The base year is 2013, with the costing figures based on costs as at end December 2013.

2. Scenario 1: 2010 system design and assumptions

2.1 Introduction

When MyCiTi was originally conceived and designed it was based on a combination of international best practice and national government's policies and funding conditions. An extensive 328 kilometre network of dedicated busways was envisaged, comprehensively serviced with closed stations in the median at one kilometre intervals.

While only Phase 1 was designed in detail a schematic understanding of the envisaged network of dedicated roadways as initially contemplated was developed, as illustrated in the following diagram, which also shows the rail network.

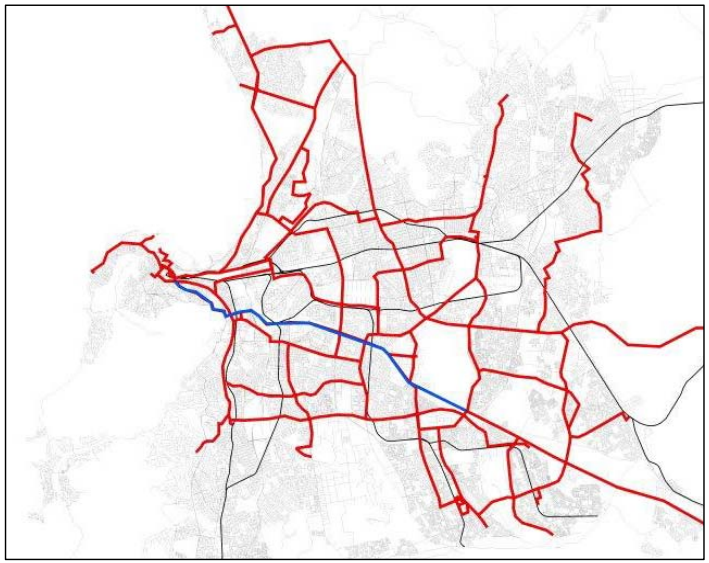


Figure 1: Original envisaged network of 328 kms of dedicated roadways (rail network also show)

2.2 Description of key variables and values

As indicated, the costs and revenues and the concomitant deficit of the MyCiTi system once fully rolled out have been calculated based on estimates of a range of variables.

There are two key assumptions that have been made which substantially impact on financial results, but which have been held constant throughout all six scenarios.

2.2.1 Population growth

The figure for annual growth in overall numbers of modelled prospective public transport users has been set at 2% for all scenarios, and is based on a similar estimate for population growth. Growth resulting from an expansion of the system, or from a shift from private cars to MyCiTi, which differs under different scenarios, is dealt with as an addition to overall demand growth of 2%.

Population growth has been closer to 2.5% per annum over the last decade, but is expected to fall to 2.0% in the coming period.

2.2.2 Route optimisation

The transport model generates an initial set of routes required to service the identified ridership. However, these routes can be optimised in order to reduce the cost of the services provided while not compromising on coverage. For example, the model assumes all vehicles on a route run from the start of the route to its end. However this is not necessary where, for

example ridership is much lower at the end of the route. In such cases some vehicles can be turned short of the route end point. Other mechanisms include allowing buses to move from one route to another during the day; starting and finishing bus trips as close as possible to depots and staging areas; and running trunk vehicles into feeder areas (referred to as trunk extensions) where trunk buses are not able to return in time to pick up more trunk passengers.

The figure used throughout all six scenarios for route optimisation over the operations initially generated by the model is 35% which may be somewhat conservative. It is based on an achieved route optimisation after modelling of more than 50% for Phase 1.

A significant factor impacting on the scope for route optimisation is the inter-operability of trunk and feeder vehicles. If such inter-operability exists, trunk services can then be extended into feeder areas using the same vehicles (referred to as 'trunk extensions'), and vice versa. Where a system has high floor trunk vehicles and low floor feeder vehicles trunk and feeder vehicles cannot be used interchangeably. This limits the scope for route optimisation. This design approach was adopted in Phase 1, following what was then international best practice.

The lack of flexibility can be addressed to some degree by using the steps and emergency door on the front left of the Phase 1 trunk vehicles to service the curbside. However this precludes universal access. Furthermore, feeder vehicles cannot be used on the trunk routes.

Much greater flexibility and inter-operability is possible by having the same door height for both trunk and feeder vehicles, together with doors on both sides of the vehicles. This would have to be low floor technology since this is required for serving the curbside if the system is to be universally accessible. It is now intended to introduce low floor trunk and feeder vehicles for Phase 2 and beyond, with route designs needing to address the articulation between Phase 1 and the rest of the system.

Another crucial contributor to scope for optimisation is the existence of dedicated roadways in congested areas. The much quicker travel time during peak periods allows vehicles to be turned around and used for more than one trip in a peak. However, the model that was used for this investigation was not able to quantify operating efficiencies arising from quicker peak travel times because of dedicated roadways, other than through the assumption of an optimisation factor.

The extent of route optimisation can substantially influence financial viability; the modelling has, however, not assumed any differential in route optimisation between the different scenarios.

2.2.3 Advertising revenue and marketing costs

For all the scenarios the amount received in advertising revenue and marketing costs are deemed to be equal. While it is sometimes believed that advertising revenues are a major potential source of income, experience in Phase 1 so far suggests that this tends to be exaggerated. Marketing costs are also variable. Deeming the two to be equal appears to be realistic and focuses the modelling more clearly on the key operational and financial factors.

2.2.4 Variables and values for Scenario 1

Some of the variables are closely related, and have thus been grouped. The following table shows all the variables, and how they have been grouped, as well as the values used for each of the variables in Scenario 1. In the ensuing text each variable is identified and explained, and the basis for the estimate for Scenario 1 is provided.

Table 1: Grouping of Variables and values for Scenario 1

Group	Variable	2010 design
Extent of system coverage	Shift from Private Car to MyCiTi	10%
	Shift from Bus to MyCiTi	100%
	Shift from minibus taxi to MyCiTi	100%
	Shift from rail to MyCiTi	15%
	Extent of 9m/12m feeder coverage	100%
	Dedicated Busway KM	328km
Demand patterns	Increased Off-Peak demand over original model	Original model
	% existing Peak demand shifted to Off-Peak	Original model
	% Peak demand shifted to Off Peak Direction	Original model
Vehicle Operating Cost	Vehicle Operating Cost per KM (18m)	R 31.70
	Vehicle Operating Cost per KM (12m)	R 28.40
	Vehicle Operating Cost per KM (9m)	R 26.10
	Vehicle Operating + Capital Cost per KM (6m)	R 15.47
Vehicle Capital Cost	Vehicle Capital Costs per KM (18m)	R7.47
	Vehicle Capital Costs per KM (12m)	R 6.46
	Vehicle Capital Costs per KM (9m)	R 6.52
Station numbers and operating costs	Extra large station operating costs	R 15.3m
	Large station operating costs	R 6.6m
	Small station operating costs (no cashier)	R 1.8m (R1.0m)
	Station Spacing on dedicated busway	1.0 km
Headways	Minimum peak headway	No limit
	Maximum day off-peak headway	20
	9m Feeder vehicles replaced by 12m Feeder	0%
Fares	Peak Tariff Base Fare	R5.50
	Off-Peak Tariff Base Rate	R4.40
	Tariff per KM	R0.11
Spare fleet	Spare Fleet	10%

2.2.5 Extent of coverage

Six variables are grouped under this heading.

For Scenario 1 it is assumed that, in addition to the growth arising from overall population growth, 10% of private vehicle users will shift to MyCiTi . International experience suggests a figure closer to 7.5%; however the figure of 10% has been adopted based on a significantly higher shift achieved in initial Phase 1 operations.

All existing bus users will shift to MyCiTi. This is consistent with the fact that over the long term 20 year horizon of the study all current formal bus services are absorbed into MyCiTi and services re-engineered such that the distinction between the two falls away.

The original 2010 design vision for MyCiTi envisaged all informal sector minibus taxi services being replaced by MyCiTi, with the operators forming MyCiTi vehicle operating companies and running the new system. Thus the shift from minibus taxis to MyCiTi under Scenario 1 is 100%. This is referred to as a 'comprehensive' approach in further scenarios.

Under Scenario 1 improvements in rail were not anticipated. Thus it was envisaged that 15% of current rail users would shift to the enhanced road based services. With tendering processes now underway aimed at a significant recapitalisation of Metrorail this projected shift is reduced in subsequent scenarios.

The variable called 'Extent of 9m/12m feeder coverage' indicates how comprehensively the feeder services that the model identifies are actually serviced by the MyCiTi system. In the 2010 design it was envisaged that all identified feeder routes would be serviced by either 9m or 12m feeder vehicles.

The 328 kilometers of dedicated busway originally envisaged in the 2010 operational plan represents an extensive approach to the creation of trunk routes and has been shown diagrammatically above in Figure 1.

2.2.6 Demand patterns

The group of variables under the heading 'Demand patterns' addresses the issue of the distribution between peak and off-peak demand which, as has been explained, significantly affects the financial viability of a service.

The original transport modelling is based on morning peak hour travel demand which is then multiplied by a factor to give all day demand. In Scenario 1 the factor by which the morning peak hour demand is multiplied to give an estimate of all day demand is 7.

In Table 1 the values are indicated to be as originally modelled. In subsequent scenarios this is changed to show a shift in the relative peak and off-peak demand, as well as counter-flow passengers.

2.2.7 Vehicle Operating Costs

The vehicle operating costs used for Scenario 1 are based on the rates that have been negotiated with the three vehicle operators in Phase 1.

The actual rates as negotiated are based on a four part pricing system which includes a fixed rate to cover overheads; a rate per driver, where the number of drivers required is based on the application by the city of an agreed method for determining this figure resulting from the city determined schedule; a rate per bus that covers all bus related costs that are not linked to the number of kilometres driven, with the fleet size calculated by applying an agreed methodology to the city determined schedule; and a variable rate based on kilometres driven as determined by the schedule.

The model calculations simplify this into a single rate based on kilometres driven, as shown in the table. There are different rates for different size vehicles.

The operating cost figures for the 18, 12 and 9 metre vehicles exclude the capital costs. A price was also agreed in negotiations with the vehicle operating companies for the provision of services by 6 metre minibus taxi type vehicles. This price, which is based on two year old vehicles and formal sector employment and management conditions, includes the capital cost of the vehicles.

2.2.8 Vehicle capital costs

The vehicle capital costs, which are differentiated by size of vehicle, are given in the following group. For modelling purposes they have been calculated as a rate per kilometre, based on the purchase cost of vehicles as procured by Transport for Cape Town, and assuming a predicted number of kilometres and payment conditions over a twelve year contract.

2.2.9 Station numbers and operating costs

The following group gives the cost of operating various sizes of closed station calculated on the basis of the current contract to manage stations which was secured through a competitive tendering process. Note that bus stops are much cheaper to run since they are relatively simple and, once constructed, require only maintenance. Their costs are not included here.

The number of smaller stations is determined largely by the length of dedicated roadway and the distance between stations. The number of larger stations is determined by the key nodes, which has been incorporated into the scenarios according to the envisaged system design.

2.2.10 Headways

The grouping entitled 'Headways' must be understood in conjunction with the grouping on 'Demand patterns'.

The model calculates demand along a route and meets that demand by providing sufficient vehicles of appropriate size. Where demand is high this entails using 18 metre vehicles at very short headways (ie short distances apart). The more peaked is the demand the shorter the headways will be in the peak. In Scenario 1 the degree of peaking is assumed from the modelled demand patterns in the earlier grouping, while no minimum restriction is placed on how quickly vehicles may follow one another.

Where demand is very low, providing only as many vehicles as are required to carry the modelled number of passengers results in very long headways. This implies very long waiting time in off-peak periods on some routes.

In Scenario 1, the headway between successive vehicles has been set at a maximum of 20 minutes so as to ensure a good level of off-peak service.

Where vehicles are smaller more frequent headways are required to carry the same number of passengers. In Scenario 1 many of the feeder routes are modelled to be served by 9 metre vehicles. This results in a more frequent service than if they were to be served by the higher capacity 12 metre vehicles. Unless road conditions prevent it, many of the 9 metre routes could be serviced by 12 metre vehicles, resulting in a less frequent service, although always remaining within the maximum headway limit of 20 minutes. In subsequent scenarios some of the 9 metre vehicles are replaced by 12 metre vehicles and the headway limit

changed. The 0% for the variable '9m Feeder vehicles replaced by 12m Feeder' indicates that in Scenario 1 this is not done.

2.2.11 Fares

Actual MyCiTi fares are based on a combination of a base rate and a rate per kilometre, and then organised into bands.

The base rate is a rate payable for merely using the vehicle, regardless of the distance travelled. This means that shorter routes cost more per kilometre than longer routes. The base rate is also differentiated between peak and off-peak periods. This has been done both to incentivise a demand shift into the off-peak period and because providing services in the peak is more costly per seat than in the off-peak.

The fares also differ as to whether a Mover package has been purchased. Mover packages are cheaper but as at the 2013/14 financial year require at least R50 to be loaded at a time.

The figures used in Scenario 1 are the Mover fares applicable in the current 2013/14 financial year. To reduce complexity and because it would have had only limited impact, they have not been banded in the model.

In subsequent scenarios fare levels are changed, including in particular, the differential between the peak and the off-peak base fare.

The fares have been set with the intention that the off-peak mover package fare is no higher than the current subsidised clipcard fare for equivalent routes, and the other fares adjusted around these. They are arguably somewhat low.

2.2.12 Spare fleet

All operations require a spare fleet to enable vehicle time out for repairs and maintenance. If the spare fleet is too low this can impact negatively on service levels.

For scenario 1 the spare fleet is set at 10% of the total.

2.3 Financial results excluding subsidy

The following table gives the financial results for Scenario 1 excluding any subsidy.

The deficit of over R6.6 billion rand a year is very substantial, although needs to be understood against the background of the very conservative nature of a number of the assumptions used.

For example, the station costs are based on a very extensive trunk network with stations at 1 one kilometre intervals throughout the system, the operational plan assumes a comprehensive servicing of the whole network, and the peak to base ratio assumptions are pessimistic when compared with actual experience in the initial stages of Phase 1.

Table 2: Projecting Operating costs for Scenario 1 excluding subsidy provision

R's millions (2013 rands)		Scenario 1
Total system revenue		**R 3 062 122 198**
including	Fare revenue	R 2 941 183 618
	Advertising revenue	R 120 938 580
System costs		
Contracted service providers		
Including	VO contracts	R 6 023 348 506
	Control Centre	R 193 260 387
	Fare system	R 470 722 146
	Station services	R 774 570 275
Total IRT: Operations & marketing		
Including	Operations Unit	R 174 436 041
	Marketing	R 120 938 580
	Insurance	R 372 363 457
Other City departments		R 255 144 708
Total system running costs excl buses		**R 8 321 618 266**
Cost of buses (annual interest and capital)		R 1 398 996 484
Total system running costs incl buses		**R 9 720 614 751**
(Deficit) before subsidies		**(R 6 658 492 552)**

3. Subsidy framework and application to Scenario 1

3.1.1 Available operating subsidies

The system is not expected to operate without subsidies. There are significant subsidies available from national government, while the City of Cape Town has also agreed to a contribution of 4% of property rates income.

The national subsidies include the Public Transport Network Operating Grant (PTNOG), and the Public Transport Operating Grant (PTOG).

The major national subsidy for bus rapid transport in recent years has been the Public Transport Infrastructure and Systems Grant (PTISG). From the 2013/14 financial year this was split into the PTNOG and the Public Transport Infrastructure Grant (PTIG). Since this study is dealing only with operating costs the PTIG is not relevant.

The various DORA grant frameworks have, for the last few years, included the following:

- From the start of operations, IRPTN/IPTN systems must recover all the direct operating costs of contracted vehicle operators from fare revenue, other local funding sources and, if applicable, from any Public Transport Operations Grant contributions. These direct operational costs consist of fuel, labour, operator administration and vehicle maintenance

The Public Transport Operating Grant referred to under this condition is the existing grant used for subsidising the provincially contracted road based public transport services. These services are intended to be devolved to the cities in terms of the National Land Transport Act, with Cape Town expected to be the first city to gain this responsibility. It is envisaged that as these services are replaced by the new MyCiTi services (as is assumed in this model) the PTOG will be shifted over, route by route, to MyCiTi.

The Public Transport Network Operating grant was created in terms of the 2013 Division of Revenue Act. It represents the operating subsidy component of the previous Public Transport Infrastructure and Systems Grant. It may not be used to cover direct vehicle operating costs but may be used to cover all ancillary costs, as set out in the most recent Division of Revenue Bill (2014):

- The grant can be used to fund the costs of maintenance of fixed public transport assets, security, station management, ticketing services, control centre operations, information and marketing, network management, insurance, interest payments for bus vehicles financed from the Public Transport Infrastructure Grant (PTIG) and compensation for the economic rights of existing operators.

In the framework contained in this latest Division of Revenue Bill (2014) it is further stated that:

- The grant can be used in each Phase and Sub-Phase of the introduction of services to fund up to 70 per cent of any deficit relating to operating costs (but not direct operating costs) for two years after the municipal financial year in which operations start. Thereafter the grant can fund up to 50 per cent
- Compensation for the economic rights of existing operators and interest payments for bus vehicles financed from the PTIG can be funded up to 100 per cent in each phase

For scenario 1 and most of the ensuing five scenarios the subsidy contribution has thus been estimated as follows:

(a) PTNOG

The long term figure of 50% subsidisation has been used for all applicable costs.

(b) PTOG

Since the model assumes the amalgamation of the provincially subsidised bus services into MyCiTi within the 20 year time horizon it is assumed that the full 100% of the PTOG subsidy is available to the road based system.

(c) City rates contribution

The City rates contribution of 4% agreed to by Council has been estimated assuming an annual real increase equivalent to population growth. This may be an underestimate since, generally, real economic growth has exceeded population growth in Cape Town.

The following table summarises the subsidies and how they have been applied.

Table 3: Summary of subsidy framework and application of framework used

Contracted service providers	**Application of subsidies**
Vehicle operator costs	PTOG may be used once subsidised service devolved
Vehicle capital costs	No longer covered up-front from PTIG but interest can be covered up to 100% from PTNOG while repayment of the capital amount can be made over time from PTIG
Control Centre Fare system Station services	
IRT: Operations & marketing Operations Unit Marketing Insurance **Other City departments**	Up to 50% covered by PTNO
Subsidies assumed in modelling	
PTNO for ancillary costs	50% of qualifying costs
PTNO for capital costs of buses	100% in most scenarios but scenario with 0% also tested
PTOG	100% of existing PTOG amount
City	4% of projected rates

3.1.2 Application of subsidy framework to Scenario 1

The following table includes the subsidies as calculated on the basis described above. As can be seen, the deficit of over R6.6 billion falls to approximately R3.0 billion per year, based on an operating subsidy of approximately R3.6 billion per year.

R1.4 billion of the R3.6 billion subsidy is to finance the vehicles, with approximately R2.2 billion allocated strictly to operating subsidies. But the deficit still remaining leaves the system unsustainable by a very substantial margin.

Table 4: Scenario 1 showing subsidies and resultant deficit

R's millions (2013 rands)		Scenario 1
Total system revenue		**R 3 062 122 198**
including	Fare revenue	R 2 941 183 618
	Advertising revenue	R 120 938 580
System costs		
Contracted service providers		
Including	VO contracts	R 6 023 348 506
	Control Centre	R 193 260 387
	Fare system	R 470 722 146
	Station services	R 774 570 275
Total IRT: Operations & marketing		
Including	Operations Unit	R 174 436 041
	Marketing	R 120 938 580
	Insurance	R 372 363 457
Other City departments		R 255 144 708
Total system running costs excl buses		**R 8 321 618 266**
Cost of buses (annual interest and capital)		R 1 398 996 484
Total system running costs incl buses		**R 9 720 614 751**
(Deficit) before subsidies		**(R 6 658 492 552)**
Subsidies		
	PTNO excluding buses	R 1 149 134 880
	PTNO capital costs of buses	R 1 398 996 484
	PTOG	R 734 000 000
	City	R 325 164 519
Total subsidy		**R 3 607 295 883**
Surplus (Deficit)after subsidies		**(R 3 051 196 669)**

4. Scenario 2: Improved 'comprehensive'

4.1 Introduction

As indicated, Scenario 1 is very conservative in its assumptions, while also maintaining a number of characteristics which experience in implementation of Phase 1 has demonstrated are inappropriate.

Scenario 2 includes system design improvements, more likely cost estimates, and changes to the fare structure intended to increase income and incentivise cost saving behavioural change.

One of the key differences is that the low floor trunk vehicles – with doors at both sides enabling them to stop both on the right at stations in the median and on the left at stops at the curbside – means that, apart from greater scope for route optimisation, on trunk routes it is possible to greatly reduce the number of stations. Unlike in Phase 1 where boarding and alighting on the trunk routes can only occur at a closed station, the low floor trunk design with single doors at front left opposite the driver for fare verification and double doors on the right where pre-board fare verification is done on the stations, means that stations need only be built where passenger numbers actually warrant them.

Scenario 2 also assumed limited success in changing travel patterns as a result of land use changes and initiatives to introduce more flexible working hours, which are discussed in greater detail later in the document.

As indicated, however, Scenario 2 maintains the approach of completely replacing the informal minibus taxi industry. For this reason it is referred to as an 'Improved Comprehensive' scenario.

4.2 Changes to key variables and values in Scenario 2

Table 5 shows the variables for Scenario 2, while Table 6 shows the financial results. In both cases the figures for Scenario 1 are also shown for ease of comparison.

4.2.1 Extent of coverage

Two significant changes are introduced under this group. Firstly, the shift from rail is reduced from 15% to 5% based on a more optimistic view regarding the likelihood of improvements to rail over the coming two decades. Indeed, there is a view that this figure of 5% remains too pessimistic and that the shift may be less – or even flow from the road based system to rail.

Because the system is loss making, a relative reduction in users – because they remain on rail – improves the financial result.

Secondly, the extent of trunk routes is significantly reduced from 328 kilometres to 207 kilometres. Again, this is a more realistic view. The following map, which can be compared with Figure 1 shows the reduced trunk network.

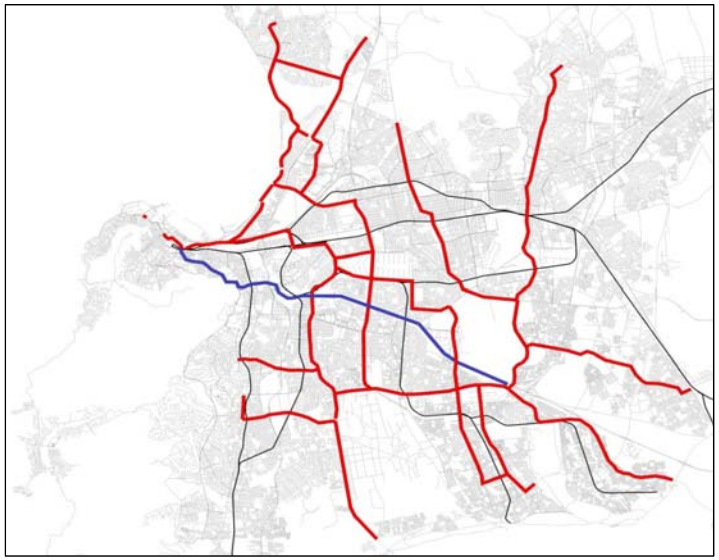


Figure 2: Map showing reduced trunk network as envisaged in Scenarios 2 to 5

4.2.2 Demand patterns

In Scenario 2 off-peak demand is increased by 85%.

Under Scenario 1 it was assumed that approximately a third of total passenger demand is in the morning peak, a third in the afternoon peak and a third in the remainder of the day. This is based on historic patterns where off-peak services are minimal. With maximum headways of 20 minutes throughout the day it is reasonable to assume some increase in off-peak demand. The variable entered here represents an increase in demand equivalent to 85% of the third of passengers previously assumed to travel in the off-peak, and not an increase of 85% of total daily passengers.

The other shifts in demand patterns need to be understood against a background of the changed fare structure where the differential between the peak and off-peak fare is increased, and, as indicated, they presuppose initiatives taken by the City in relation to more flexible work hours and changed land use patterns.

The shift of 4% of the peak demand to the reverse flow is based on a much more substantial counter flow ridership in peaks on phase 1. On the Phase 1 trunk service between Table View and the Civic centre the counter flow ridership is now approaching half of the main directional flow.

4.2.3 Vehicle Operating Costs

Vehicle operating costs used in Scenario 1 were based on negotiated rates in an unusual context.

There was a desire to include and empower as many players from the existing minibus taxi industry as possible; three companies were created so as to build a basis for competitiveness in future but thereby introducing diseconomies of scale in the context of a relatively small service; and there was a premium arising from the fact that the system was new and unfamiliar.

For Scenario 2 a reduction of 5% in the vehicle operating costs is thus assumed, which is conservative.

4.2.4 Vehicle capital costs

The vehicle capital costs change not because of changes in prices, but because of changes to the predicted number of kilometres run by the different classes of vehicle over the duration of the modelled 12 year contracts.

4.2.1 Station numbers and operating costs

Station numbers are significantly fewer in Scenario 2 than in Scenario 1.

As explained above, this is not only because the trunk network is considerably shorter, but also because in terms of the new design it is possible to have much longer distances between stations. The average interval increases from one kilometre in Scenario 1 to three kilometres in Scenario 2.

A 5% reduction in the costs of running the stations has also been introduced, based on the assumption that as the system is bedded down and the scope for efficiencies becomes evident tendered prices will in the future be lower.

4.2.1 Headways

The assumptions for headways have not been changed between the two scenarios other than that it has been assumed that 20% of the feeder routes previously serviced by 9 metre vehicles are now serviced by 12 metre vehicles, increasing some headways although always remaining within the 20 minute maximum limit.

4.2.2 Fares

In Scenario 2 not only are fares increased, but the differential between peak and off-peak fares is also increased somewhat.

The higher fares remain well within the bounds of affordability and are in line with the fares intended to be introduced on MyCiTi from 1st July 2014. The off-peak fares at these rates remain largely consistent with current subsidised bus fares for equivalent routes.

The increased differential between peak and off-peak fares is intended to incentivise the shift in ridership from peak to off-peak.

4.2.3 Spare fleet

Experience on Phase 1 has demonstrated that the spare fleet provision can be lowered to 8%.

Table 5: Values for variables used in Scenario 2

Group	Variable	2010 design	Improved comprehensive
Extent of system coverage	Shift from Private Car to MyCiTi	10%	*Same as Sc1*
	Shift from Bus to MyCiTi	100%	*Same as Sc1*
	Shift from minibus taxi to MyCiTi	100%	*Same as Sc1*
	Shift from rail to MyCiTi	15%	5%
	Extent of 9m/12m feeder coverage	100%	*Same as Sc1*
	Dedicated Busway KM	328km	207km
Demand patterns	Increased Off-Peak demand over original model	Original model	85%
	% existing Peak demand shifted to Off-Peak	Original model	5%
	% Peak demand shifted to Off Peak Direction	Original model	4%
Vehicle Operating Cost	Vehicle Operating Cost per KM (18m)	R 31.70	R 30.12
	Vehicle Operating Cost per KM (12m)	R 28.40	R 26.98
	Vehicle Operating Cost per KM (9m)	R 26.10	R 24.80
	Vehicle Operating + Capital Cost per KM (6m)	R 15.47	*Same as Sc1*
Vehicle Capital Cost	Vehicle Capital Costs per KM (18m)	R7.47	R 7.33
	Vehicle Capital Costs per KM (12m)	R 6.46	R 7.68
	Vehicle Capital Costs per KM (9m)	R 6.52	R 6.30
Station numbers and operating costs	Extra large station operating costs	R 15.3m	R14.5m
	Large station operating costs	R 6.6m	R6.3m
	Small station operating costs (no cashier)	R 1.8m (R1.0m)	R1.7m (R0.9m)
	Station Spacing on dedicated busway	1.0 km	3.0 km
Headways	Minimum peak headway	No limit	*Same as Sc1*
	Maximum day off-peak headway	20	*Same as Sc1*
	9m Feeder vehicles replaced by 12m Feeder	0%	20%
Fares	Peak Tariff Base Fare	R5.50	R6.05
	Off-Peak Tariff Base Rate	R4.40	R4.84
	Tariff per KM	R0.11	R0.16
Spare fleet	Spare Fleet	10%	8%

Table 6: Financial results of Scenario 2 showing comparison with Scenario 1

R's (2013 rands)		Scenario 1	'Improved'
Total system revenue		**R 3 062 122 198**	**R 3 763 478 693**
including	Fare revenue	R 2 941 183 618	R 3 642 540 113
	Advertising revenue	R 120 938 580	R 120 938 580
System costs			
Contracted service providers			
Including	VO contracts	R 6 023 348 506	R 4 892 529 492
	Control Centre	R 193 260 387	R 142 075 964
	Fare system	R 470 722 146	R 322 496 139
	Station services	R 774 570 275	R 493 480 358
Total IRT: Operations & marketing			
Including	Operations Unit	R 174 436 041	R 174 436 041
	Marketing	R 120 938 580	R 120 938 580
	Insurance	R372 363 457	R306 837 410
Other City departments		R 255 144 708	R 219 230 153
Total system running costs excl buses		**R 8 321 618 266**	**R 6 672 024 137**
Cost of buses (annual interest and capital)		R 1 398 996 484	R 1 180 878 122
Total system running costs incl buses		**R 9 720 614 751**	**R 7 852 902 259**
(Deficit) before subsidies		**(R 6 658 492 552)**	**(R 4 089 423 566)**
Subsidies			
	PTNO excluding buses	R 1 149 134 880	R 889 747 323
	PTNO capital costs of buses	R 1 398 996 484	R 1 180 878 122
	PTOG	R 734 000 000	R 734 000 000
	City	R 325 164 519	R 325 164 519
Total subsidy		**R 3 607 295 883**	**R 3 129 789 964**
Surplus (Deficit) after subsidies		**(R 3 051 196 669)**	**(R 959 633 602)**

4.3 Discussion of financial results

The changes result in significant cost reductions and revenue increases across the system.

Fare revenue is increased because of the higher rate. Vehicle costs fall because of the slightly reduced rates as well as the fact that the shift in ridership from the peak to the off-peak reduces fleet size. Associated costs such as insurance also fall.

Fare system costs are driven to a considerable degree by the management and maintenance of fare system infrastructure on stations, so a cut in station numbers not only reduces station costs, but also fare system costs. Control centre costs are reduced mainly through the reduction in fleet size.

These changes result in a reduction in the deficit before subsidies from R6.7 billion to R4.1 billion if the capital charges on vehicles are included in operating costs. Because the annual subsidy is based on a percentage of ancillary costs it also falls from a total of R3.6 billion to R3.1 billion.

The resultant deficit after subsidies falls from R3.1 billion to just under R1.0 billion – a significant improvement but still unaffordable.

5. Scenario 3: Hybrid approach

5.1 Shift between Scenarios 2 and 3

In Scenario 2 it was assumed that the MyCiTi system comprehensively replaced the informal minibus taxi industry. In Scenario 3 it is assumed that the the MyCiTi system only replaces half of the current services provided by minibus taxis, cutting the minibus taxis share of the public transport market from approximately 35% to about 17.5%.

This is done by reducing the coverage of feeder routes from 100% to 70%, but is likely to result also in some minibus taxis operating in the same area as parts of MyCiTi.

The lower service level resulting from a reduction in the MyCiTi footprint is also assumed to reduce the shift in private cars to MyCiTi to 7.5% instead of 10%.

The hybrid approach is discussed further below.

The variables are shown in Table 7 and the financial results of the change in Table 8. Again, all three scenarios are shown for ease of comparison.

5.2 Discussion of financial results

The introduction of the hybrid approach reduces the deficit before subsidies by over R700 million per year, although because of the basis upon which the national government subsidies are calculated the subsidy is assumed to fall so that the resultant gap after subsidies is reduced by only R331 million to R628 million.

The total subsidy payable falls from R3.1 billion to R2.7 billion per year.

While the gap is closing in comparison with earlier scenarios, unless costs can be cut further, or fare revenue increased, or the subsidy increased the system remains unaffordable to the City.

All three of these may be feasible. A further reduction of 10% to vehicle operating costs, which is by no means impossible given the environment in which the original contracts were determined, would reduce the gap by R367 million rand to R261 million. If this is combined with a 10% fare revenue increase the gap would be fully covered.

This is discussed further in the concluding sections.

Table 7: Variables for Scenarios 1 to 3

Group	Variable	2010 design	Improved comprehensive	Improved hybrid
Extent of system coverage	Shift from Private Car to MyCiTi	10%	*Same as Sc1*	7.5%
	Shift from Bus to MyCiTi	100%	*Same as Sc1*	*Same as Sc2*
	Shift from minibus taxi to MyCiTi	100%	*Same as Sc1*	50%
	Shift from rail to MyCiTi	15%	5%	*Same as Sc2*
	Extent of 9m/12m feeder coverage	100%	*Same as Sc1*	70%
	Dedicated Busway KM	328km	207km	*Same as Sc2*
Demand patterns	Increased Off-Peak demand over original model	Original model	85%	*Same as Sc2*
	% existing Peak demand shifted to Off-Peak	Original model	5%	*Same as Sc2*
	% Peak demand shifted to Off Peak Direction	Original model	4%	*Same as Sc2*
Vehicle Operating Cost	Vehicle Operating Cost per KM (18m)	R 31.70	R 30.12	*Same as Sc2*
	Vehicle Operating Cost per KM (12m)	R 28.40	R 26.98	*Same as Sc2*
	Vehicle Operating Cost per KM (9m)	R 26.10	R 24.80	*Same as Sc2*
	Vehicle Operating + Capital Cost per KM (6m)	R 15.47	*Same as Sc1*	*Same as Sc2*
Vehicle Capital Cost	Vehicle Capital Costs per KM (18m)	R7.47	R 7.33	*Same as Sc2*
	Vehicle Capital Costs per KM (12m)	R 6.46	R 7.68	*Same as Sc2*
	Vehicle Capital Costs per KM (9m)	R 6.52	R 6.30	*Same as Sc2*
Station numbers and operating costs	Extra large station operating costs	R 15.3m	R14.5m	*Same as Sc2*
	Large station operating costs	R 6.6m	R6.3m	*Same as Sc2*
	Small station operating costs (no cashier)	R 1.8m (R1.0m)	R1.7m (R0.9m)	*Same as Sc2*
	Station Spacing on dedicated busway	1.0 km	3.0 km	*Same as Sc2*
Headways	Minimum peak headway	No limit	*Same as Sc1*	*Same as Sc2*
	Maximum day off-peak headway	20	*Same as Sc1*	*Same as Sc2*
	9m Feeder vehicles replaced by 12m Feeder	0%	20%	*Same as Sc2*
Fares	Peak Tariff Base Fare	R5.50	R6.05	*Same as Sc2*
	Off-Peak Tariff Base Rate	R4.40	R4.84	*Same as Sc2*
	Tariff per KM	R0.11	R0.16	*Same as Sc2*
Spare fleet	Spare Fleet	10%	8%	*Same as Sc2*

Table 8: Financial results for Scenarios 1 to 3

R's (2013 rands)		Scenario 1	'Improved'	'Hybrid'
Total system revenue		**R 3 062,122,198**	**R 3 763 478 693**	**R 2 743 274 346**
including	Fare revenue	R 2 941 183 618	R 3 642 540 113	R 2 622 335 766
	Advertising revenue	R 120 938 580	R 120 938 580	R 120 938 580
System costs				
Contracted service providers				
Including	VO contracts	R 6 023 348 506	R 4 892 529 492	R 3 668 251 585
	Control Centre	R 193 260 387	R 142 075 964	R 109 808 375
	Fare system	R 470 722 146	R 322 496 139	R 233 096 018
	Station services	R 774 570 275	R 493 480 358	R 493 480 358
Total IRT: Operations & marketing				
Including	Operations Unit	R 174 436 041	R 174 436 041	R 174 436 041
	Marketing	R 120 938 580	R 120 938 580	R 120 938 580
	Insurance	R372 363 457	R306 837 410	R220 656 017
Other City departments		R 255 144 708	R 219 230 153	R 171 994 489
Total system running costs excl buses		**R 8 321 618 266**	**R 6 672 024 137**	**R 5 192 661 461**
Cost of buses (annual interest & capital)		R 1 398 996 484	R 1 180 878 122	R 884 098 957
Total system running costs incl buses		**R 9 720 614 751**	**R 7 852 902 259**	**R 6 076 760 418**
(Deficit) before subsidies		**(R 6 658 492 552)**	**(R 4 089 423 566)**	**(R 3 333 486 072)**
Subsidies				
	PTNO excluding buses	R 1 149 134 880	R 889 747 323	R 762 204 938
	PTNO capital costs of buses	R 1 398 996 484	R 1 180 878 122	R 884 098 957
	PTOG	R 734 000 000	R 734 000 000	R 734 000 000
	City	R 325 164 519	R 325 164 519	R 325 164 519
Total subsidy		**R 3 607 295 883**	**R 3 129 789 964**	**R 2 705 468 414**
Surplus (Deficit) after subsidies		**(R 3 051 196 669)**	**(R 959 633 602)**	**(R 628 017 658)**

6. Scenarios 4 and 5: Capping peak supply

6.1 Introduction

It has been demonstrated how the changes introduced in Scenario 2 and 3 reduce the gap between costs and revenues, and how further vehicle operating costs reductions of 10% and fare revenue increases of a similar percentage can remove the gap.

However, it is important to understand how the gap is affected by other factors.

One of the common misconceptions about public transport finances is the assumption that increased ridership is always financially advantageous to the system.

In principle, if a loss making system is expanded, losses will increase, all else being equal. The reduced losses arising from the reduction in services in the hybrid model arise primarily because a loss making system is reduced in size.

Finances will obviously improve if the unit costs are reduced and the revenues increased.

But one of the key factors lies in the time of day in which ridership increases, and whether it adds to peak demand or off-peak demand. Where peak demand in the main peak direction of flow is increased additional vehicles and drivers are required adding to costs, whereas where the increase is to off-peak demand it can be met with existing capacity. Indeed, it may not even require an increase in kilometres driven if there are sufficient vacant seats on existing off-peak vehicles.

In Scenario's 2 and 3 the peak to off-peak ratio has been reduced through a relatively small assumed voluntary shift from peak to off-peak and reverse flow services.

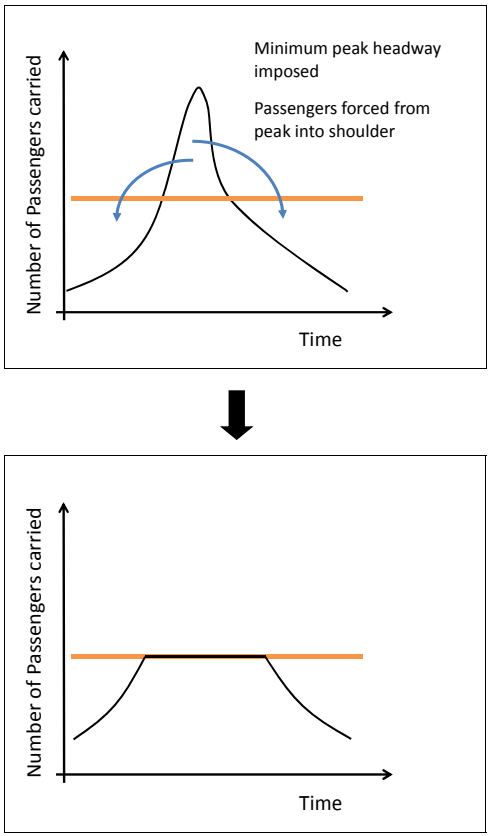
In the following Scenarios the financial impact of limiting peak supply is examined.

6.2 Schematic representation of capping peak supply

Figure 3 shows schematically what occurs when vehicle supply is capped in the peak. Some of the passengers wishing to travel in the peak are forced into the shoulder. This results in a longer peak period, but unless passengers find other alternatives the total number of passengers carried remains constant.

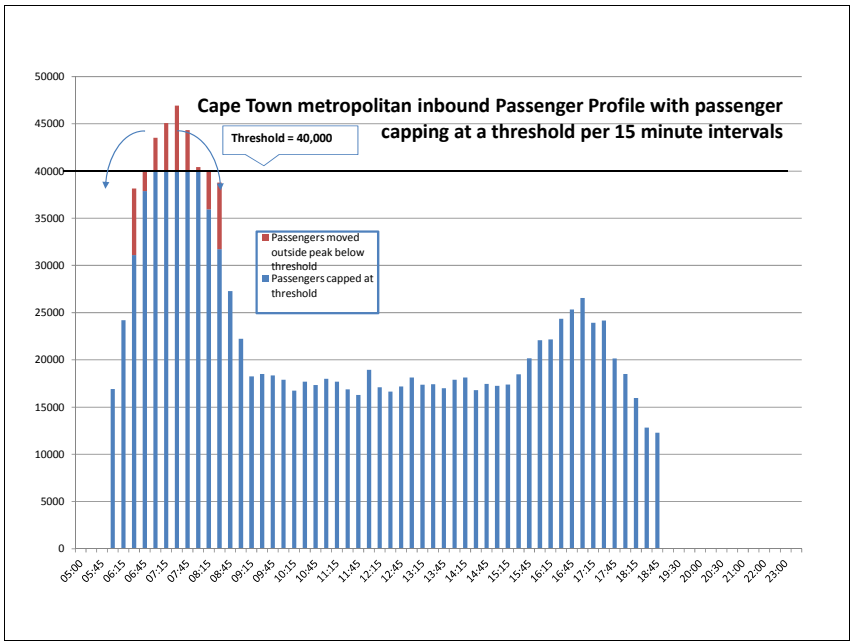
The extent of potential savings depends on a number of other factors. In particular, it depends on vehicle cycle times; ie. the time it takes for a vehicle to run a trip and return to the trip starting point. If the cycle time is short enough then the same vehicle is able to provide more than one peak trip, thus saving significant costs. Where cycle times are too long there will be no savings. The longer the period over which the peak is spread the greater the potential for vehicles to return and run repeated trips during a single peak period.

Figure 3: Schematic representation of capping peak supply



In Figure 4 this concept is applied to actual figures for inbound passengers in the Cape Town Metropolitan area.

Figure 4: Peak capping applied to actual Cape Town Metropolitan passenger data



For Scenarios 4 and 5 all the same values for Scenarios 2 and 3 are used respectively, but the minimum headway between vehicles in the peak is capped at 90 seconds. In other words, supply is limited to a maximum of one vehicle every 90 seconds.

6.3 Financial results where minimum headway of 90 seconds is imposed

Table 9 shows the financial results of imposing a cap of a minimum 90 second headway on both the 'Improved Comprehensive' (Scenario 2) and the 'Improved Hybrid' (Scenario 3) cases to give Scenarios 4 and 5.

In Scenario 4 the gap falls to levels that can easily be addressed by other measures, and Scenario 5 shows a surplus of R126 million after subsidies of R2 456 million, calculated on the same basis as in the previous scenarios.

The importance of these scenarios are that they demonstrate the significance of the financial impact relating to how peak demand is addressed and the kind of measures that could be taken to reduce the deficit. Such measures do have significant service level implications which are discussed further below after a discussion of one further scenario.

Table 9: Financial results for Scenarios 4 and 5 - a minimum headway of 90 seconds imposed on the Improved Comprehensive Model (Scenario 2) and the Improved Hybrid Model (Scenario 3) respectively

Minimum headways capped at 90 seconds			
R's (2013 rands)		Scenario 4 'Improved comprehensive' capped at 90s	Scenario 5 'Improved Hybrid' capped at 90s
Total system revenue		**R 3 030 276 750**	**R 2 236 647 228**
including	Fare revenue	R 2 909 338 170	R 2 115 708 648
	Advertising revenue	R 120 938 580	R 120 938 580
System costs			
Contracted service providers			
Including	VO contracts	R 3 388 591 767	R 2 492 357 245
	Control Centre	R 116 469 107	R 90 585 144
	Fare system	R 251 550 147	R 179 836 408
	Station services	R 493 480 358	R 493 480 358
Total IRT: Operations & marketing			
Including	Operations Unit	R 174 436 041	R 174 436 041
	Marketing	R 120 938 580	R 120 938 580
	Insurance	R 230 395 211	R 158 329 081
Other City departments		R 177 332 501	R 137 833 354
Total system running costs excl buses		**R 4 953 193 712**	**R 3 847 796 210**
Cost of buses (annual interest and capital)		R 979 927 220	R 719 657 055
Total system running costs incl buses		**R 5 933 120 932**	**R 4 567 453 265**
Deficit before subsidies		**(R 2 902 844 182)**	**(R 2 330 806 037)**
Subsidies			
	PTNO excluding buses	R 782 300 972	R 677 719 482
	PTNO capital costs of buses	R 979 927 220	R 719 657 055
	PTOG	R 734 000 000	R 734 000 000
	City	R 325 164 519	R 325 164 519
Total subsidy		**R 2 821 392 711**	**R 2 456 541 057**
Surplus (Deficit) after subsidies		**(R 81 451 470)**	**R 125 735 020**

7. Estimating subsidy availability

7.1 Subsidy approach used in modelling

Thus far the analysis has applied the subsidy framework as set out in the Division of Revenue Act to the modelled results at the maximum rate. Where, for example, the subsidy framework reads that payment of "up to 50%" of stipulated costs will be covered it has been assumed that they will be calculated at 50%.

Based on this approach Table 10 shows the subsidy levels which have been assumed in each of the five scenarios thus far, rounded to the nearest R million. The figures for PTOG and contribution from City rates remain constant across all scenarios, but the figures from the PTNO grant, both for ancillary costs and the capital charges on buses vary according to modelled costs.

Note, for example, that the assumed subsidy for Scenario 4, which is the 'Improved Comprehensive' scenario with a minimum peak headway capped at 90 seconds, is higher than Scenario 3, which is the 'Improved Hybrid' scenario uncapped. This is because the larger number of vehicles assumed under the comprehensive scenarios result in a higher subsidy for bus capital costs.

Table 10: Subsidy amounts assumed for Scenarios 1 to 5

Subsidies (R millions)	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
PTNO excluding buses	R 1 149m	R 890m	R 762m	R 782m	R 678m
PTNO capital costs of buses	R 1 399m	R 1 181m	R 884m	R 980m	R 720m
PTOG	R 734m	R 734m	R 734m	R 734m	R 734m
City	R 325m	R 325m	R 325m	R 325m	R 325m
Total subsidy	**R 3 607m**	**R 3 130m**	**R 2 705m**	**R 2 821m**	**R 2 456m**

This raises the crucial question as to whether such subsidies will, indeed, be forthcoming. As is explained later in this analysis, the failure of national government to provide a clear fiscal envelope to cities which are in the process of designing and implementing new public transport systems creates significant risks.

7.2 National spending on public transport

National government currently spends very large amounts on the subsidisation of public transport. Recent and projected spending by national government on public transport is shown in Table 11. This includes both capital and operating expenditure. The figure spent on operating subsidies in the 2013/14, including both bus and rail operating subsidies is about R9.11 billion.

These figures indicate that current and projected expenditure on Metrorail is the highest single item, although the capital expenditure allocated to Gautrain between 2006/7 and 2011/12 of R28.9 billion was very substantial. The Gautrain continues to benefit from an ongoing subsidy known as a 'ridership guarantee' which ensures a minimum revenue stream to the operator if ridership does not reach agreed levels. The exact figure paid so far appears to be in excess of R500m annually.

Most of the spending on bus rapid transit (BRT) systems has been under the PTISG grant, with the PTNOG only being introduced more recently, as has been explained above. It is likely that the PTNOG figure will climb substantially as the BRT systems currently being planned and implemented become operational.

Table 11: Recent and projected expenditure by national government on various public transport programme 2011/12 to 2015/16 (R billions)

R billions	2011/12	2012/13	2013/14	2014/15	2015/16
PTOG	**4.15**	**4.32**	**4.55**	**4.78**	**5.00**
PTISG	**4.61**	**4.99**	**4.67**	**5.13**	**5.28**
PTNOG	-	-	**0.88**	**0.74**	**0.86**
Taxi recap	**0.45**	**0.46**	**0.52**	**0.55**	**0.58**
Total PRASA subsidy	**9.47**	**10.23**	**11.16**	**14.60**	**17.93**
Current subsidy	3.34	3.53	3.68	3.89	4.07
Capital subsidy	6.13	6.70	7.48	10.71	13.87
Gautrain	**0.01**	**Total Capital subsidy approx 28.9 b between 2006/7 and 2011/12**			
Gautrain ridership guarantee		**0.5?**	**0.5?**	**0.5?**	**0.5?**

7.3 Estimated capital cost of a BRT system in a South African metropolitan city

The analysis in this document has focussed on operational expenditure. However the estimated costs for capital items drawn from Cape Town's experience thus far shown in Table 12 are instructive in assessing overall financial feasibility.

Table 12: Cost estimates for a selection of key capital items

Item	Cost
Bi-directional Dedicated Trunk Bus ways	+/- R50 million/km
Bi-directional Mixed Traffic Trunk Bus ways	+/- R0.77 million/km
Bi-directional Mixed Traffic Feeder Routes	+/- R1.5 million/km
Costs of Phase 1A Depots	+/- R170 million/depot
Depot costs per bus	± R1.6million/bus

These are high level estimations based on the cumulative capital expenditure associated with both historical and current infrastructure contracts for Phase 1, where the proportional costs are assigned to various indicator categories defined above. They can be used as a rough guide to the full costs of BRT network infrastructure for a city such as Cape Town.

A system with 200 kilometres of trunk network would thus cost in the region of R12 - 15 billion at 2013 prices. While this is a substantial amount it is by no means beyond what national government is likely to be prepared to pay over a twenty year period if such a system were to fundamentally improve public transport in each of the major cities.

7.4 Feasible levels of operating subsidy

Of more concern are the ongoing operating subsidies.

International evidence suggests that operating subsidies for public transport in a metropolitan area can be expected to lie somewhere between 0.5% and 1.0% of metropolitan Gross Geographic Product.

At 2013/14 prices 1% of the annual Gross Geographic Product of South Africa's eight metropolitan areas combined is about R16.2 billion, of which Cape Town accounts for about R2.9 billion. Applying the international benchmarks thus suggests South Africa might expect to spend between R8.1 billion and R16.2 billion per annum on transport operating subsidies for its eight metropolitan areas combined.

The existing figure of R9.11 billion for annual operating subsidies is thus towards the lower end of the benchmark. The range for Cape Town might similarly be expected to lie between R1.45 billion and R2.9 billion per year for all modes combined.

An argument could be made that given South Africa's high levels of income inequality combined with extremely inefficient urban form the appropriate figure would be at the high end of the range, which in Cape Town's case would thus be close to R2.9 billion per annum.

Only the total national amount going to PRASA for rail operating subsidies is known; the amount accruing to the rail system in Cape Town is not made public by PRASA, but if it is roughly estimated that R1.0 billion of the available subsidy might accrue to the rail system, it would leave R1.9 billion as the maximum feasible annual amount for ongoing operating subsidies for the road based system in Cape Town in 2013 rands.

This is approximate R0.5 billion lower than the figure assumed for Scenario 5.

8. Scenario 6: Managing a reduced subsidy

8.1 Introduction

In response to the possibility of reduced subsidy expectations Scenario 6 has been developed. In this scenario it is assumed that the capital costs of the vehicles are not paid for out of a national subsidy, and in response the minimum headway for peak services is capped at 2 minutes rather than 90 seconds. The system is thus based on the 'Improved Hybrid' model – or Scenario 3 – but with minimum headways capped at 2 minutes.

8.2 Financial implications

Table 13 shows the financial results of Scenario 6. The figures for Scenario 5, which is the 'Improved Hybrid' scenario but with minimum headways of 90 seconds, is shown alongside for ease of comparison.

There is a small gap of approximately R38 million which should be easy to close. However, the subsidy expectation has fallen to R1.69 billion, which places it firmly inside the projected maximum envelope of about R1.9 billion.

Table 13: Hybrid model with minimum headway set at 2 minutes in response to no funding of capital costs of vehicles

R's (2013 rands)		'Improved Hybrid' with headway capped at 90 secs	'Improved Hybrid' with no subsidy for capital charges of vehicles Headway capped at 2min
Total system revenue		**R 2 236 647 228**	**R 2 075 515 792**
including	Fare revenue	R 2 115 708 648	R 1 954 577 212
	Advertising revenue	R 120 938 580	R 120 938 580
System costs			
Contracted service providers			
Including	VO contracts	R 2 492 357 245	R 1 966 627 962
	Control Centre	R 90 585 144	R 79 296 889
	Fare system	R 179 836 408	R 148 561 331
	Station services	R 493 480 358	R 493 480 358
Total IRT: Operations & marketing			
Including	Operations Unit	R 174 436 041	R 174 436 041
	Marketing	R 120 938 580	R 120 938 580
	Insurance	R 158 329 081	R 130 239 438
Other City departments		R 137 833 354	R 122 437 536
Total system running costs excl buses		**R 3 847 796 210**	**R 3 236 018 135**
Cost of buses (annual interest and capital)		R 719 657 055	R 571 445 955
Total system running costs incl buses		**R 4 567 453 265**	**R 3 807 464 090**
(Deficit) before subsidies		**(R 2 330 806 037)**	**(R 1 731 948 298)**
Subsidies			
	PTNO excluding buses	R 677 719 482	R 634 695 087
	PTNO capital costs of buses	R 719 657 055	R 0
	PTOG	R 734 000 000	R 734 000 000
	City	R 325 164 519	R 325 164 519
Total subsidy		**R 2 456 541 057**	**R 1 693 859 606**
Surplus (Deficit) after subsidies		**R 125 735 020**	**(R 38 088 692)**

9. The implications of capping the minimum headway

9.1 Introduction

Scenarios 4 to 6 have shown the profound impact that can be made on the finances of the MyCiTi system by reducing the number of passengers carried during the peaks in relation to the rest of the day. Indeed, even the improved finances of Scenarios 2 and 3 were partly driven by these sorts of changes.

The difference between Scenarios 2 and 3 and the last three scenarios is that while it was assumed in the former that this change was voluntary and arose because of improved land use patterns and an increased peak to off-peak fare ratio driving demand changes, in the latter it was achieved by cutting the supply in the peaks and forcing ridership elsewhere.

9.2 Fleet size and passenger displacement

Table 14 shows the number of vehicles of different types that the model indicates are required to provide the services assumed under the different scenarios. The progressive drop in costs from Scenario 1 to 6 is matched to a large degree by the reduction in fleet size.

The table also shows in the bottom two rows the proportion of passengers forced to travel outside the peak for Scenarios 4 to 6. The first of the two rows shows the proportion of passengers who, according to the model data, would have wished to travel in the peak hour but are forced to travel at a different time. Where the minimum peak headway imposed is 90 seconds 34% of the passengers seeking to travel in the peak hour are forced to travel outside this period, while where the minimum headway imposed is two minutes this figure climbs to 46%.

In the modelling it has been assumed that half of these displaced passengers shift their travel time to the shoulder and the other half leave the system, using private transport or other public modes. This proportion is shown in the bottom row of the table.

Table 14: Fleet characteristics for each scenario and passenger exclusion from the peak in Scenarios 4 to 6

	Sc1: 2010 design no min headway	Sc2: Improved Comprehensive no min headway	Sc3: Improved Hybrid no min headway
18m trunk	3 522	2 982	2 403
12m trunk	221	187	151
12m feeder	0	190	107
9m feeder	1 748	1 184	668
6m feeder	298	252	142
	Sc4: Improved Comprehensive 90sec min headway	**Sc5: Improved Hybrid 90sec min headway**	**Sc6: Improved Hybrid 120sec min headway**
18m trunk	1 774	1 429	1 085
12m trunk	117	95	71
12m feeder	200	113	113
9m feeder	1247	703	703
6m feeder	266	214	150
% pax excluded from peak hour	***34%***	***34%***	***46%***
% passengers shift to shoulder	***17%***	***17%***	***23%***

The practical implication of this approach is that there would be significant crowding and queuing during this peak period. This is, indeed, a feature of many, if not most public transport systems across the world. It is matched by peak hour traffic congestion amongst private vehicle users, although for these travellers the queuing and waiting is done in the privacy and comfort of a private vehicle.

The key issues are to determine, firstly, what levels of queuing and crowding are acceptable on the one hand and affordable on the other; and secondly, whether other measures can be taken so that the peak demand is spread voluntarily over a longer period rather than forced. These measures would seem to include increasing the differential between peak and off-peak fares, and encouraging more flexibility in working hours. Changed land use patterns would also make a difference. An urban form where origins and destinations are more evenly distributed along corridors would offer more scope for peak spreading. And certainly, any counter flow movement in peaks would not suffer from congestion and would increase revenues for no additional system cost.

9.3 Off-peak services

The issue of capping the minimum peak headway also raises issues as to how to respond to off-peak demand. Where off-peak demand is low the natural response is to cut off-peak services to save costs. This may be justified, but if the ultimate objective is to achieve a more even all-day demand, cutting off-peak services may be counter-productive.

Peak and off-peak supply needs to be carefully calibrated so as to optimise the balance over time between passenger revenues and costs on the one hand and user satisfaction on the other.

10. Key conclusions

A number of key conclusions can be drawn directly and indirectly from the above analysis.

10.1 Financial feasibility

It is financially feasible to extend the MyCiTi system across the metropolitan area, but only under certain conditions, the nature of which have been indicated by this analysis. Crucial factors, which are dealt with further below, include not only the need to contain unit costs, and enhance fare revenues, but also to understand how patterns of demand drive costs and how such patterns need to be managed and addressed to improve affordability. The extent of the MyCiTi footprint needs to be optimised.

Financial feasibility is also crucially dependent on the receipt of large operating subsidies from national government, combined with some support from the City's own revenues.

In comparison with required national government subsidies the contributions from the City's own revenue sources, despite being significant in relation to the City's own tax base, are relatively small. Closing the gap between costs on the one hand and fare revenue and subsidies from national government on the other, by pushing up the City contribution is not feasible to any substantial degree. The system as it stands is fundamentally dependent upon national subsidies, or the development in co-operation with national government of new city own revenue sources.

In this context both the extent and long term predictability of subsidy availability or new revenue sources is crucial. Costs have not thus far been well understood, making it difficult for national government to provide a clear long term fiscal envelope, but where new systems are being designed and implemented the lack of such guidance adds risk.

The key risk lies not in the potential loss of capital subsidies since if these are reduced the roll-out of the system can be delayed until they resume. However, once the system is in place and long term contracts are signed the City has an ongoing commitment which it cannot avoid.

The scale of the amounts involved means that the City has only a limited capacity to manage financial risks associated with the project. Assuming under Scenario 5, for example, revenue was 10% lower than anticipated and vehicle operating costs 10% higher this would translate into an additional funding gap of R460 million – or, based on property rate growth assumptions, close to 6% of rates. These risks could be driven by circumstances outside of the City's control, such as rocketing fuel prices or extended social unrest. The City does not have deep enough pockets to manage financial risk at this scale.

The City is clearly in a better position to design and ensure effective management of the system than are other spheres of government, but metropolitan wide roll-out needs to be done incrementally, in close co-operation with national government, with detailed attention to costs and cost drivers, on the basis of well structured and predictable financial arrangements including arrangements to manage financial risks.

10.2 Patterns of demand

Improved financial performance is not driven by increased passenger numbers. Indeed, increased passenger numbers will worsen financial performance unless the additional

revenue earned from the increase matches the additional costs incurred. It is the patterns of passenger demand that determine financial performance.

10.2.1 Peak to off-peak differential

The above analysis has demonstrated the impact on financial feasibility of the differential in demand between peak and off-peak periods, and need not be discussed further here, other than to highlight the significance of this factor and the need to develop strategies to address it.

10.2.2 Counter flow demand

While not discussed in as much detail, it is clear that, as with off-peak ridership, counter-flow demand is financially beneficial to the system. Where demand is similar in both directions vehicles can travel full on the outward as well as the return journey, earning twice the revenue at no additional cost compared to when demand is uni-directional.

10.2.3 Seat renewal and reduced travel distance

The analysis has not dealt in detail with seat renewal and travel distance, but they are an important aspect of demand which drive financial performance. As in most systems, MyCiTi fares do not increase linearly with trip length; shorter trips can be charged at a higher rate per kilometre than longer ones yet still be cheaper and thus more affordable to users.

Where there are many riders boarding and alighting along a route – referred to as seat renewal – rather than all travelling from the start of the vehicle's journey to its end on 'line-haul' routes, each seat is able to earn significantly more revenue per vehicle trip.
While higher demand permits larger vehicles to be used thus reducing costs per seat, a route with even demand throughout the day in both directions with high levels of seat renewal will be profitable even if demand is not particularly high. High demand with inverse characteristics to this will be loss making.

Even where demand is uni-directional, short distances with short cycle times permit vehicles to do repeated peak trips, significantly reducing costs.

10.3 Land use patterns

It follows from the above that improved land use is critical to improved system finances. Improvement in this context does not necessarily mean densification by itself; it implies land use patterns which lead to demand with the characteristics described in 10.2.

Indeed, densification in the wrong place can worsen financial sustainability. Where there are, for example, high residential densities distant from places of work resulting in long, peaked, unidirectional line haul trips the financial implications are significantly negative. These types of land use patterns tend to characterise Cape Town's current urban form, and there is a danger that such patterns get perpetuated rather than changed.

The process set in motion by the National Land Transport Act (2009) to assign responsibility for public transport to cities is driven by an intention to locate such responsibility with the same institutions responsible for land use decisions. This should incentivise land use decisions which are favourable to more efficient and compact urban form from a transport perspective.

10.4 Vehicle operating costs, fare revenue and other savings

While a worsening of operating costs and fare revenue by 10% under Scenario 5 worsens the gap by R460 million, an improvement by a similar percentage generates a similar improvement.

The improved scenarios have assumed a 5% real reduction in vehicle operating costs; but over the long term, in a context of tendered contracts and a more mature system a significantly better improvement should be possible. Against this, higher than inflationary increases in equipment and fuel could have adverse implications. In the short to medium term, where contracts are negotiated, it is essential that the City does so effectively.

While fare levels have been set with the intention that the off-peak Mover package does not exceed existing subsidized fares, the translation from the old fare structure to the new has arguably meant that in some cases these are now lower than existing subsidised fares.

The old subsidy approach, whereby only those travelling for the majority of the week's working days could benefit, meant that it was only really of benefit to regular commuters. This excluded more *ad hoc* poor users and tended to worsen the peak to off-peak ratio. The new system is an improvement, but will require adaptation by users.

The City will have to carefully adjust it fares over time both to increase revenue and incentivise travel patterns which reduce operating costs.

Vehicle operating costs and fare revenue are highlighted because they are the largest single items. But cost cutting and revenue enhancement needs to be pursued vigorously across all items. Institutional arrangements need to be configured within Transport for Cape Town that lead to ongoing driving out of efficiencies across the system as it is bedded down.

10.5 The 'IRT' model

In general, while costs are high, the overall business principles of the new system appear to be well founded despite there being areas where it can be enhanced. The high operating costs are not caused so much by the integrated rapid transit model, itself, but rather by the improved standards being implemented, including hours of operation, and the fact that the system is not yet mature.

Indeed, the bus rapid transit model – facilitated by the technology used – should, in the long run, bring operating costs down once the benefits of competition and new technology are realised. This is because, firstly, having all vehicles centrally controlled through a control centre and fares collected by a single, independent fare collection system, allows more than one vehicle operating company to be contracted on the same route. This creates the conditions for a much greater level of competition between operators than hitherto, which should drive vehicle operator prices down over time. City ownership of the depots makes real competition for operator contracts feasible, unlike the current situation where the private ownership of a well located depot can give overwhelming advantage to the owner in terms of reduced dead kilometres, largely precluding competitors. Given that vehicle operating costs are such a large part of overall costs this is significant.

Secondly, dedicated roadways, and stations enabling many people to board and alight quickly allow a much quicker service in the peak periods. Apart from being much more convenient to the user, this should significantly reduce the peak bus and driver requirement and so bring costs down.

Thirdly, the electronic fare systems and control centre offer the scope for getting very detailed information on passenger demand patterns and vehicle operations. This should allow a much better understanding of travel demand needs and quicker and more efficient supply response to such demand.

That said, even where there are cost and other advantages in the medium to long term, there are substantial challenges associated with the implementation of a new system. Furthermore it takes time to tailor new concepts to practical reality.

Initially the system design was driven largely by international best practice and standard international configurations. However, these have not always proven suitable to South African conditions. For example, the idea that trunk routes should have only stations in the median is not an appropriate design where boarding and alighting along the route are minimal; it results in too many expensive, under-utilised stations. The intended change from high floor trunk technology to low floor vehicles for further roll-out after Phase 1 is an example of the type of response that arises through experience. As indicated above, it will make it possible to replace many of the stations with stops and thus reduce costs.

Other refinements are likely to arise over time.

One question that remains open is whether placing greater levels of responsibility in the hands of the public sector in terms of design of routes and timetables – as is the case with the new system as compared to the old – will lead to more adverse financial results in the long term. The public sector will have to be willing to sometimes take unpopular measures in order to maintain financial sustainability.

10.6 'Hybrid model'

A number of scenarios have been built around the concept of the 'hybrid model' – where the formal MyCiTi system does not attempt to fully replace the informal minibus taxi system, but leaves it servicing part of the market.

Minibus taxis are often efficient at what they do. Because they use mass technology and operate in a highly flexible and competitive way within the informal sector environment they have a much lower cost structure per vehicle than formal bus rapid transit. Their informal sector cost structure is significantly lower than the tariff negotiated for the supply of 6 metre vehicles in the formal context of Phase 1. Their smaller vehicle size means they are relatively good at servicing off-peak and low volume markets. Nevertheless, because their current model means they only run when full, their off-peak services are unpredictable on most routes. Their informal characteristics also tend to make them much less safe, and often result in poor working conditions for drivers.

If servicing an area incurs significant losses for MyCiTi and informal, 'on demand' minibus taxi services are able to do so profitably, it could be prudent to leave such markets to the minibus taxi industry. This will depend partly on whether they are able to provide better services than would have been feasible through MyCiTi – which, because of their flexibility, may be the case; and the level of additional fare the user is forced to incur.

Minibus taxis cannot be forced to give up their licences, although in terms of current legislation any licences not surrendered will expire after 7 years. Furthermore, as MyCiTi is rolled out there will be instances where minibus taxis running routes not serviced by MyCiTi intersect for part of the MyCiTi route.

For all these reasons it is critical to investigate in what way the minibus taxi industry and MyCiTi could optimally be able to co-exist and complement one another. It may be that this is best done by allocating some routes and services exclusively to MyCiTi and others to the minibus taxi industry; or it may be possible for them to co-exist on some routes. If minibuses were allowed to carry some of the peak demand but stay out of the off-peak served by MyCiTi this would help flatten MyCiTi's peak to off-peak differential. However, it would be challenging to successfully achieve this nuanced level of regulation.

Innovations or even incentives may be possible that offer benefits to taxis such that it is in their interests to operate in a way that is complementary to MyCiTi. Some integration of fare systems may be part of a solution where minibus taxis are incentivised to deliver passengers to the MyCiTi system rather than attract them away from it. Safety concerns must also be addressed.

A successful articulation between MyCiTi and the minibus taxi industry will not be easy to achieve but could offer very substantial benefits in optimising public transport, and if fully replacing the industry is too costly it may be unavoidable Pursuing these models requires creativity and experimentation. Attention must also be paid to the infrastructure and management implications of a hybrid system.

11. Key priorities for action

From the analysis the following emerge as the key priorities if MyCiTi is to be rolled out affordably in the long term.

11.1 Review and refinement of MyCiTi based on Phase 1 experience

There needs to be ongoing review and refinement based on the emerging experience in Phase 1 focusing on

- Ongoing improvement to the system design
- Close attention to cost reduction measures

This requires that current demand and supply be thoroughly understood using all available tools, including information from the fare system and control centre.

Measures are also required to minimise station costs through reducing station numbers in future designs and minimising station operational costs. Attention should be paid to all measures which increase MyCiTi travel times, including signalling prioritisation and dedicated lanes where required on feeder routes.

11.2 Travel demand management

Measures are needed to manage travel demand through incentives and other mechanisms. These should be focussed on

- smoothing the peak to off-peak demand differential
- encouraging counter-flow demand
- stimulating seat renewal

The impact of setting a minimum peak headway needs to be thoroughly understood, recognising that voluntary change is preferable to forced change.

Engagement with relevant stakeholders to encourage more flexible working hours should be prioritised.

11.3 Transit oriented land use

While travel demand can be managed to a degree through incentives, more flexible working hours and other mechanisms, ultimately the most significant factor is improved land use. TOD attempts to manage the form, composition and location of urban development in a way that makes public transport more affordable, accessible and efficient.

Land use changes should

- be informed by the requirements for improving public transport financial sustainability,
- improve the location of intensification and densification of land use along existing and planned higher order road-based public transport infrastructure, using measures under the City's control, i.e. land use planning approval process.

- encourage optimally designed corridors

11.4 Hybrid approach

The feasibility of various hybrid models needs to be investigated. Opportunities are needed for experimentation. This may include in Phase 1, even where minibus taxis have been removed, since it may be easier to dictate the terms of any new licences granted.

The implications for infrastructure provision, operational costs and regulatory mechanisms need to be understood.

11.5 Fare levels

Ongoing attention is required to design and calibrate fares optimally. Approaches are needed which maximise revenue and incentivise behaviour change in line with demand management priorities, while ensuring affordability.

11.6 Vehicle operating costs

Close attention must be paid to

- minimising unit vehicle operating costs in future price negotiations and
- introducing price competition wherever feasible

11.7 Partnership approach with national government

While a partnership approach with national government does already exist, this needs to be significantly deepened.

While Transport for Cape Town needs to take responsibility for the risks that are under its control, national government needs to

- clarify the long term fiscal envelope within which the system is to be developed
- co-design standards such that they can be met within this envelope based on an affordable and appropriate contribution from the City's own revenue sources
- guarantee reliable and predictable revenue sources for ongoing subsidisation of the system at agreed levels
- institute mechanisms to manage risk of unexpected events with adverse financial consequences where the impact of such risks is beyond the City's financial capacity to address it.

Appendix: Modelling assumptions

1	Costs and revenue are based on information provided by System Planning
2	The costs and revenue are general estimates based on the full system scenario 57 model with updated fare structure and free transfers on all feeder and trunk routes but with the original phase 1 routing.
3	New Phase 1 routing has not been included as it will have little effect on the modelling of the full system
4	The Optimisation process to reduce vehicle kilometres was based on initial model results with reductions identified by means of short turns on trips, alternating destinations, trunk extensions (whereby trunk vehicles continue onto feeder routes, and reducing dead kilometres.
5	The figures provided regarding maintenance, for both Control Centre and Automated Fare System are best estimates based on what is currently known. More accurate figures should become evident after the system has been operated for at least a year. Maintenance costs are largely affected by the type of labour required and for what hours. Requiring specialist skills to be on standby for 24 hours a day is very costly.
6	All Current public transport users are assumed in the initial model to shift to IRT (BRT and Rail) with no conventional bus and taxi routes remaining; except to the extent to which this is clearly stated in the model
7	Hours of Operation are 04:30am to 11:00pm for all services with a generalised minimum level of service operating as specified in the different scenarios.
8	Costs are based on figures as revealed in Phase 1, where there are 3 VO companies in a fairly small market area. The modelling does not impute any savings arising from reducing or increasing the number of VO companies. The initial cost model (2009) for the full system assumed 8 VO companies.
9	18m, 12m and 9m buses are paid for by the City. 6m buses are provided by the VO company.
10	The modelling excludes depreciation or replacement of capital items, as these are assumed to be covered by the Public Transport Infrastructure Grant or Public Transport Network Operating Grant as is provided for in current and recent Division of Revenue Acts. (eg. Buses)
11	The original s57 model was based on 18m and 12m vehicles and not 9m feeder vehicles.
12	Fare Revenue is based on estimates contained in the October 2012 Business Plan
13	The modelling does not take into account parallel competing services from, for example, the minibus taxi industry. These are assumed to have been removed as in the case of Phase 1 or retained on the basis explicitly provided for in the scenarios where they operate complementary to and not in competition with MyCiTi.
14	The deficit does not seek to quantify and incorporate economic and social benefits.
15	Where provided for in the model 6m vehicles are assumed to operate 10 minute headways in the peak period and 20 minute headways in the off-peak period.
16	It is assumed that revenue from 6m vehicles falls to 2/3 of the projected estimates when headways are doubled for peak period (to 20min) and off-peak period (to 40 min).
17	It is assumed that all people who travel by 6m vehicles transfer to MyCiti Feeders and extra base fare revenue accrues for a portion of the passengers who comprise the extra shift from private over and above the 10% shift already assumed.
18	No allowance is made for fare evasion which was initially assumed to be 2% in the original cost model in 2009
19	Several feeder routes (F05, F11, F17, F24, F31 and F35) had very little demand.
20	From the demand profile along some full system routes it is clear that a better route design is needed.
21	Annual GABS subsidy was assumed at R734 million for the projected area of the model

22	Extra base tariff add on due to addition of 6m service to system estimated at 25%
23	City's rates income estimated at R 5.519 billion in 2012
24	Percentage of revenue collected from feeders estimated at 6% of total

Annexure G. Council resolution – Approval of 2032 Integrated Public Transport Network (IPTN)

EXTRACT FROM MINUTES

OF THE MEETING OF THE COUNCIL OF THE CITY OF CAPE TOWN HELD IN THE COUNCIL CHAMBER, 6TH FLOOR, PODIUM BLOCK, CIVIC CENTRE, 12 HERTZOG BOULEVARD, CAPE TOWN, ON WEDNESDAY, 25 JUNE 2014 AT 10:00.

C 59/06/14 **DEVELOPMENT OF A CITY-WIDE 2032 INTEGRATED PUBLIC TRANSPORT NETWORK (IPTN) PLAN**

An extensive debate ensued on this matter during which Cllr A Ehrenreich enquired from the Executive Mayor as to what the City is doing to address the spatial divide in Cape Town.

The Executive Mayor P de Lille said that the City's Integrated Public Transport Network (IPTN) Plan would serve as a guideline for the alignment of all the City's plans and projects for community development along the identified corridors. She said that the City's Transport Authority together with relevant role-players will also address the alignment of the rail issues with the City's plans.

RESOLVED that:

(a) the Integrated Public Transport Network Alternative 5 (TA5) as appended as Annexure A to the report on the agenda, be approved as the City's Integrated Public Transport Network (IPTN) 2032

(b) this proposed IPTN (TA5) will be Transport for Cape Town's (TCT) 2032 public transport network plan and position, and will form the system planning base for public transport corridor identification and associated projects and for any public transport-related agreements with affected stakeholders, and will further form the basis of:

(i) the IPTN operational plan which will provide operational detail with respect to level of service on the identified routes. This operational plan must give special attention to the transport towards the end of 2014;

(ii) the IPTN implementation plan which will provide a roll-out plan detailing the phase implementation of the IPTN towards 2032. This implementation plan will be submitted to Council towards the end of 2014;

(iii) the IPTN business plan which will in detail report on both the economic and financial assessment of this preferred IPTN. This business plan will be submitted to

Council by mid-2015.

(c) notwithstanding the fact that this 2032 IPTN was developed in terms of a pragmatic Transit-orientated Development (TOD), Council to adopt the TOD comprehensive assumptions and principles as detailed within the IPTN report as attached in Annexure B to the report on the agenda. These assumptions and principles will be used to further develop a more TOD comprehensive land use scenario;

(d) the 2015 review of the IPTN, will assess and report on the impacts of the TOD comprehensive land use scenario as developed as per recommendation (c) above and may include any refinements stemming from the IPTN operational, implementation and business plans as described in (b) above;

(e) the proposed IPTN (TA5) be updated every five (5) years to account for updated transport data and behaviour, updated transport demand modelling and business planning, land use changes and alignment with corporate, provincial and national plans and strategies.

ACTION : G FORTUNE, M MAZAZA, M WHITEHEAD