

eThekweni Municipality's Go! Durban BRT programme

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ABSTRACT

This is a case study of the experiences of Go! Durban in executing strategic phases of its Integrated Rapid Public Transport Network (IRPTN) plan within the eThekweni Municipality. EtheKweni Municipality aims to be the most liveable city in Africa by 2030. One of the measures is ensuring a more efficient transportation network system that minimises delays into and out of the city. A challenge to overcome is managing the increasing number of single occupancy vehicles and mini bus taxis entering the city. In order to create a more sustainable transport network for the future that tackles both capacity issues as well as mobility, the eThekweni Transport Authority's implementation arm – Go! Durban undertook an ambitious Bus Rapid Transit (BRT) implementation plan commencing in 2010. The planning yielded a public transport network that is an intricately woven scheme of various physical components that have been designed to function not only at their best as individual components, but also together, as a seamlessly integrated system.

The full network will comprise an integrated package of nine universally accessible routes namely one rail and eight rapid bus trunk routes with dedicated Right of Ways (ROW), feeder and complimentary services for public transport. Implementation of Phase 1 is currently underway, namely Corridor 1 from Bridge City to Durban Central Business District (CBD), Corridor 3 from Bridge City to Pinetown and New Germany via MR 577 and Corridor 9 from Bridge City to Umhlanga New Town Centre via Cornubia & Phoenix Highway.

Supported by National Government funding, where all major cities have been mandated to create and implement fully integrated public transport networks over the next 15 years, the BRT rollout is also aimed at creating jobs and skills development opportunities for marginalized communities – with women, youth and the disabled well represented in the project workforce through Contractors Participation Goal (CPG) and Local labour. In addition, the rollout of the Go! Durban BRT programme is presented as a model of partnership between a capacitated Organ of State and the Private Sector.

INTRODUCTION

This article aims to showcase the rollout of the Go! Durban BRT programme and will focus on the master plan, design, technical implementation for Phase 1, challenges, lessons learned and future rollout plan. Key infrastructure features constructed during Phase 1 is highlighted in this article.

BACKGROUND

Sustainable public transport was identified by the South African Cities Network (SACN) as a priority theme for exchange and challenge between member cities in 2008. Public transport being highlighted as a key challenge was partly attributed to the priority service commitment for the 2010 FIFA World Cup as significantly more public funding resources were being directed to spur a major revolution in South Africa's transport system and due to the 2008 Local Government Budgets and Expenditure Review which stated that "if improvements to existing roads and infrastructure and public transport challenges are not tackled in a robust way, municipalities will find that growth in the private-motor vehicle use will increasingly become a problem."

The key proposal for the integration of public transport to occur fluidly in South Africa, in terms of linkages between housing provision and transportation, was for the State to allow local government to have a greater autonomy to innovatively approach and improve service delivery within their nine cities. In the Sustainable Public Transport Overview Report for 2009, it was stated that "Public Transport is a key sector (along with human settlements and land use management) in the built environment suite of functions that should be clearly assigned to city administrations if we are to achieve urban integration policy objectives."

eThekweni Municipality was one of the twelve eligible cities to receive funding from the Public Transport Infrastructure System Grant (PTISG) for the implementation of Integrated Public Transport Networks (IRPTN). In February 2010, eThekweni Municipality appointed a consultant to undertake the planning of a priority public transportation network and the subsequent preliminary design of Phase 1 of such a network. The eThekweni's IRPTN is aligned with the public transport integration requirements of Government, embracing a range of appropriate public transport modes, which include Rail Rapid Transit (RRT), Bus Rapid Transit (BRT), Quality Bus and Mini Bus Services.

This new system is a flexible, high performance range of public transport modes that combines a variety of physical, operational and systems elements into a permanently integrated system with a quality image and identity. eThekweni Municipality's public transport network puts the traveller at the centre of everything by ensuring priority right of way along trunk public transport corridors, the integration between rail, road based public transport and non-motorised transport (NMT), traveller information systems and other intelligent transport systems to name a few. (Goba Engineering, 2012)

PLANNING

The ultimate IRPTN plan for the municipality comprises some 250 km of trunk public transport corridors of which some 60km are rail based. The full IRPTN network will be within 800m (10-15 minute walk) for more than eighty-five percent of the Municipality's population. The full network will comprise an integrated package of nine universally accessible routes namely one Rail Rapid Transit (RRT) Corridor and eight Bus Rapid Transit (BRT) trunk routes titled with dedicated Right of Ways (ROW), feeder and complimentary services for public transport. The trunk network configuration is shown in Figure 1: Trunk network configuration for eThekweni IRPTN.

As stated in the preliminary design reports, the extent of the network undoubtedly required a phased implementation approach based on demand and ridership potential; physical constraint to infrastructure implementation; investment intensity; job creation; operational and subsidy cost implications; opportunity for densification / regeneration and creation of transit orientated development and opportunity to re-organise operators in an effective manner.

Phase 1 was packaged to integrate land-use proposals for Greenfield developments and public transport from the start. It aimed to create a critical mass with an immediate recognizable benefit, replace all existing Northern Area contracted Public Transport services of the municipality and include the mini-bus taxi industry into the supplementary feeder programs. (Goba Engineering, 2012)

Utilizing the above considerations, four Corridors were identified for Phase



FIGURE 1: Trunk network configuration for eThekweni IRPTN (Goba Engineering)

1 of the IRPTN Implementation Strategy namely:

- Corridor 1 – BRT from Bridge City to Durban Central Business District (CBD),
- Corridor 2 – RRT from Bridge City to Durban Central Business District (CBD),
- Corridor 3 – BRT from Bridge City to Pinetown and New Germany via MR 577
- Corridor 9 – BRT from Bridge City to Umhlanga New Town Centre via Cornubia & Phoenix Highway.

The specific objectives of preliminary design were to ensure that a technically viable infrastructure solution existed to support the public transportation system and its operational requirements. It was imperative that technical risks were identified, applicable mitigating measures developed and that appropriate definition to the required infrastructure was established to ensure the success of the IRPTN. To meet these objectives the appointed consultant, eThekweni Transport Authority (ETA), eThekweni Line Departments, Environmental and Universal Access consultants and KZN DoT met weekly to create the foundations for the municipalities “wall-to-wall” IRPTN plan.

The preliminary design was completed in 2012. A separate set of consultants were appointed to commence with the detailed design and implementation phases of the BRT trunk routes in 2012. The designs for Phase 1 were completed over 2014 and 2015.

IMPLEMENTATION

The IRPTN branch dedicated to implementation in eThekweni Municipality was branded “Go! Durban” in 2012. The Go! Durban programme consists of eleven work streams that work collectively to achieve the successful implementation of the IRPTN in the municipality. The work streams are Infrastructure, Operations, ITS & IFMS, Planning, MRE & Law Enforcement, Skills Development, Marketing and Change Management, Sustainability, Integrated Corridor Development, Legal and Fleet.

This article concentrates on the Infrastructure work stream – the arm that provides the roll-out of the BRT building and civil works. The IRPTN infrastructure itself was viewed as a catalyst for urban regeneration and the framework around which land-use activity could be arranged taking into consideration universal access and green goals. The Infrastructure components of Phase 1 is the Bus Rapid Transit (BRT) Services supported by the road based feeder and complimentary services, comprising of:

- Right of Way (dedicated busways and associated infrastructure),
- Stations & Station Precincts,
- Terminal Facilities & Depots
- Information Communications Technology and Integrated Fare Management

- Control Centre

Implementation of Phase 1 is currently underway, namely Corridor 1 (C1), Corridor 3 (C3) and Corridor 9 (C9). Corridor 2 (C2) has been postponed due to misalignment in implementation goals for the external stakeholders and the Go! Durban project programme. The Rail Rapid Transit (RRT) C2 will be included in the final roll out plan of the IRPTN network, not necessarily as part of Phase 1 implementation.

RIGHT OF WAY (ROW)

The right of way work packages included the design of the three road routes for the BRT lanes for Phase 1 of the IRPTN project. The buses will use designated driving lanes, termed Right of Way (ROW) lanes that will operate independently from other traffic modes utilizing kerbs and barriers to create the lateral separation. The bus lanes will be constructed in the median of the roadway rather than alongside the outer edge of the road. The aim of dedicated lanes is to ensure the transport system will run systematically with scheduled times and routes. Key decisions for the design of the BRT trunk routes were to maintain or improve existing road capacity where possible; maintain level of service at intersections; pedestrian crossings to follow a staggered arrangement to improve safety; sidewalk widths to be 3m to promote foot traffic to and from stations; BRT Lane width to be 3.5m and kerbs utilized to separate traffic modes should be mountable in cases of emergency by the BRT.

The construction of the right of way included widening of the trunk routes, whereby service relocation, land acquisition and pre-planning with all interested and affected parties is a requirement. These are factors that could potentially cripple the projects timeous delivery.

BRT CORRIDOR 1 (C1)

Corridor 1 (C1) begins at Bridge City and terminates at Durban CBD. There are two C1 corridors, C1A which runs along Umgeni Road into the CBD and C1B which follows Alpine Road/Felix Dlamini Road before reaching the CBD. The route has been divided into seven smaller work packages of approximately 3km each. Commencement of construction began in 2018 for two work packages connecting the C3 route to C1 route, these packages traverse Inanda Road with the widening and realignment of Inanda Road and Umgeni Road.

BRT CORRIDOR 3 (C3)

Construction of C3 trunk route and stations is nearing completion. This was the pioneering Corridor for the IRPTN in eThekweni Municipality connecting Bridge City in KwaMashu to Pinetown and New Germany via MR 577. The C3 Corridor has fourteen stations and the trunk route was divided into nine work packages.

BRT CORRIDOR 9 (C9)

Implementation of Corridor 9 connecting the BRT from Bridge City in KwaMashu to Umhlanga Ridge via Cornubia & Phoenix Highway has commenced with two key linkages, M25 Bhejane Underpass and Cornubia Bridge, being completed. The C9 corridor is divided into ten work packages.

STATIONS & PRECINCT AREA

A total of forty-three stations precincts were identified and designed during the preliminary design of the system. The designs included the design of the station structures, the transition areas and the linkages within the station precincts for pedestrian access and improvements to the public environment surrounding the stations. The improvements envisaged by Go! Durban was to create a more welcoming, vibrant streetscape by incorporating amenities such as landscaping, sidewalks, lighting, street furniture, and formal spaces for street vendors and public toilets if demanded.

Each station node presents a unique context and has to be evaluated to ensure opportunities, which could be of benefit to customers, can be maximised. This may require a change to the zoning of the land around the stations to allow for retail opportunities or increased residential densities. Complimentary and feeder stops were located close to the identified stations forming part of the precinct design. Park and ride facilities were not recommended for Phase 1. (Goba Engineering, 2012)

The ROW required a holistic approach to incorporate the integration of the public and the open spaces surrounding the trunk route and the stations. The inclusion of technical specialists from the Built Environment field such as town planners, architects, urban designers and landscape designers were essential to ensure the BRT Route compliments the scale and character of the surrounding area and harmonises with the communities they serve.

FEEDER FACILITY

The feeder transfer facility is a transfer point between the feeder routes and the trunk. There are several feeder routes within an area. Feeder transfer facilities need to facilitate turning movements and short term storage for the different modes of transport over and above hosting safe pedestrian movement. Each feeder route starts and terminates at designated areas, and have stops along the way for passengers to board/alight. The feeder transfer facilities are located at designated areas, based on passenger demands within the area.

GO! DURBAN KEY IMPLEMENTATION FEATURES

Corridor 3 (C3) was the pilot trunk route for the Go! Durban project connecting Bridge City in KwaMashu to Pinetown and New Germany via MR577. It is approximately 85% complete with the last few major work packages nearing project completion in the next year. C3 has fourteen stations planned. Regent Station, located in Shepstone Road in Pinetown, was the prototype station completed in 2017. Being the initial trunk route, many encounters were a first for the newly formed Go! Durban team, however despite the setbacks the C3 corridor reflects the core vision of the IRPTN network implementation in the city. The construction of the MR577 link from Pinetown to KwaMashu, the M25/Bhejane Underpass and the Cornubia Bridge link from Umhlanga to KwaMashu, Regent Station in Pinetown – a state of the art architectural masterpiece and the significant urban renewal and mixed-land use promotion across the Pinetown CBD, are noteworthy features that depict the foundation of the imminent potential the completed IRPTN network will unlock in eThekweni Municipality. These key features are discussed in greater detail highlighting the three linkages, the station and station precinct development.

MR577 (DUMISANI MHAKAYE DRIVE)

The culmination and dedication of the different spheres of government working together with the private industry was clearly evident in the brilliant construction of the 10km long road that provided a fifth main crossing over the Umgeni River. The result branded, “Durban’s best kept secret” was the MR577 (Dumisani Mhakaye Drive); a two-lane: four-lane, split-level dual carriageway, with the dedicated BRT lanes separated from general traffic by reinforced concrete traffic barriers.

The proposed MR577 route was an initiative planned by the KZN DoT over 20 years ago to provide critical access for local residents in the communities of Inanda, Ntuzuma and KwaMashu to jobs and commercial activity in New Germany and Pinetown. In 2003, construction commenced however with the governments IRPTN initiative and the PTISG funding, in 2013 it was deemed critical by eThekweni Municipality’s IRPTN planning team that the BRT traverse this new route. As stated by the sector engineer, “It would’ve been difficult and expensive to retrofit a BRT component into the project when it was completed and so the process of engagement began to stitch the two projects together.

The decision to proceed with two contracts for separate clients on the same site was possible only because of the cooperative engagement between all parties. The six-lane design, with different geometric requirements and pavement designs, placed immense pressure on the design team. It is testament to the dedication of the whole professional team.”

The MR577 was opened to the public in December 2017 due to the collaborative efforts of the two spheres of government, The KZN Department of Transport and eThekweni Municipality, and the private sector involvement. The opening of the new North-South carriageway alleviated congestion along the M4, M12, R102 and N2 and provided an alternate route to King Shaka International Airport completely independent of the N2 thereby enabling the City to take a step closer in achieving the national transport goals mandated by the State in 2008. The alignment of goals for all parties involved allowed for the technical creativity, sound problem solving and project excellence realised in the completion of the MR577.

A portion of the MR577 is illustrated in Figure 2: MR577 6-lane dual-car-



FIGURE 2: MR577 6-lane dual-carriageway, lateral separation between bus lane and other modes of transport. ROW Lanes separated by concrete barrier kerbs on KZN DoT roads (Tongaat Hulett website)

riageway, lateral separation between bus lane and other modes of transport. ROW Lanes separated by concrete barrier kerbs on KZN DoT roads (Tongaat Hulett website).

M25/ BHEJANE ROAD UNDERPASS

A link between Bridge City Precinct in KwaMashu and Phoenix Industrial Area was required as part of the IRPTN plan for Corridor 9. The M25/Bhejane Road Underpass Interchange was a critical linkage into Inanda, Ntuzuma and Kwamashu (INK) neighbourhoods and for the C9 route which runs to Umhlanga Ridge via Cornubia. This underpass carries the C3 Route over the new C9 route refer to Figure 3: M25 Bhejane Underpass linking the C9 Route from KwaMashu to Umhlanga (Go! Durban website).

The eThekweni Municipality was awarded the highly commended award in the category of technical excellence at the South African Institution of Civil Engineering (SAICE) regional awards held in June 2017 and the SAICE



FIGURE 3: M25 Bhejane Underpass linking the C9 Route from KwaMashu to Umhlanga (Go! Durban website)

National Awards for Technical Excellence in October 2017. The internal design team, seconded from the City's Engineering Unit Roads Provision Department, on the ETA managed Go! Durban project received the award for "pushing technical engineering limits to deliver high-quality infrastructure that is good value for money". Construction of the bridge took approximately 12 months with the deck being cast in thirds and staged on conventional formwork. Pot bearings manufactured by Nova Bearings in Johannesburg, and a steel claw-type expansion joint was utilised. The underpass accommodates two BRT lanes of 3.6m widths. (Rowan & Agar, 2018)

The Bhejane underpass is a landmark in the city illustrating the technical excellence and innovation that the eThekweni Municipality is capable of. The municipality aims to tackle engineering problems with excellent solutions.

CORNUBIA BRIDGE

The Cornubia Bridge fulfils a number of functions for both IRPTN and the greater eThekweni Municipality. It is a key component for the Go! Durban network which crosses the N2 highway linking onto Umhlanga Ridge Boulevard and accommodates both the C8 and C9 networks from the airport and Bridge City respectively. It creates an access point to the new Cornubia Development – a development that exemplifies the ideals of the IRPTN vision through fully integrated mixed land-use and mixed modes of transport. The bridge is 125m long and 50m wide, carrying six mix-used traffic lanes, pedestrian sidewalks and two bus lanes. The bridge consist of three ramps, two attenuation ponds for stormwater management and one retaining wall on the N2 southbound side.

The resulting Cornubia Bridge, Figure 4: Cornubia Bridge linking C9 Route from KwaMashu to Umhlanga (Tongaat Hulett website), was the outcome of a private and public partnership that aligns with the cities Northern Urban Development Corridor. This alignment in planning and implementation along the IRPTN network once again illustrates the benefits of the Municipality taking ownership of change required in the City and embracing mutually beneficial partnerships to ensure the City prospers.

REGENT STATION

Fourteen stations are planned for the C3 route, with ten stations completed to date and four currently under construction. Completion of the station construction is anticipated at the end of 2019.

Regent Station, the prototype station, located at the intersection of Regent Street and Qashana Khuzwayo Roads in New Germany was completed in December 2017 (Figure 5: Regent Station - Go! Durban's Prototype Station completed in 2017 (Skybox Media)). This new streamlined glass and steel framework creates iconic landmarks in the Pinetown CBD, fostering a more vibrant world-class atmosphere to the surrounding area. The architect involved in the design of the station for the entire IRPTN stated that the form of the station was inspired by movement, the dynamic design should uplift the image of public transport and be delivered at a high-quality and distributed in a democratic way across city, suburb and township. (SAIA-KZN Journal. 2018)

To ensure commuters can travel reliably, safely and cost effectively, stations will have a fully integrated CCTV system and electronically controlled ticketing systems utilizing Muvo Cards. Muvo Cards are a safe and convenient fare system introduced to eliminate the need to carry cash and reduce crimes commonly associated with public transport. The Muvo Cards are currently being tested on some public transport around Durban. The City is also currently testing Wi-Fi on selected People Mover Buses ahead of the new Go! Durban system going operational in order to see patterns of usage. The results of this pilot system will determine the roll-out and availability of Wi-Fi in the new system. (Go! Durban, 2017)

The Regent station was tested for compliance with Universal Accessibility (UA) with level boarding for people with disabilities such as hearing or visual impairments as well as wheelchairs and including elderly, people with prams or bicycles to ensure they will have ease of access into stations and buses.



FIGURE 4: Cornubia Bridge linking C9 Route from KwaMashu to Umhlanga (Tongaat Hulett website)

Catering for the needs of the people, tactile paving was introduced in the station precinct to indicate where the commuters need to walk. These can be found on the pavements leading into the stations and within the stations leading into the control entrances.

STATION PRECINCTS

The implementation of the BRT through the densely populated region of Pinetown has improved the face of the CBD, as illustrated in Figure 6: ROW Lane on Josiah Gumede Avenue, Pinetown – running east, illustrating the station and station precinct visions of mixed land-use, integration of tactile paving, lateral separation of bus lanes and other traffic modes (Skybox Media). It has been noted that along the C3 route, upgrades of urban precinct nodes with new lighting, street furniture and landscaping have already begun to alter the way residents and business owners use the spaces available, making it a far safer and more user-friendly environment.

In addition, residents and business owners are taking the initiative to improve and upgrade home and shop frontages following the IRPTN's precinct development model. This transformation highlights the success of the stations and station precinct implementation strategy formulated by the Go! Durban programme whereby the complimentary integration of public spaces and open spaces in the vicinity of the trunk routes was achieved.

Design and construction of stations in Pinetown have channelled a wide spectrum of benefits relating to the environment, economy, aesthetics, public



FIGURE 5: Regent Station - Go! Durban's Prototype Station completed in 2017 (Skybox Media)



FIGURE 6: ROW Lane on Josiah Gumede Avenue, Pinetown – running east, illustrating the station and station precinct visions of mixed land-use, integration of tactile paving, lateral separation of bus lanes and other traffic modes (Skybox Media)

health and safety, civil participation, good public spaces around the stations. Go! Durban's vision to provide well used community spaces and integration with Public Transport Planning and Land-Use planning capturing mutually-beneficial synergies has come to fruition.

The success of the C3 stations and precincts have boosted the Municipality's internal departments' interest in mixed-use development, concentrated development, complimentary land use and integrated land planning strategies. Housing divisions, land use development and town planning divisions are creating frameworks along the trunk routes to subsidise businesses and promote densification. This is another aspect of private-public partnerships being promoted within the municipality.

The C9 route exemplifies the promotion of planning ahead between eThekweni Municipality and private developers. Cornubia, a fully integrated concept of mixed-use and mixed-income development in terms of industrial, commercial, residential and open space usage, is situated along the C9 Route. Cornubia's Town centre will be designed to accommodate an array of transport types from vehicular to non-motorised transport and pedestrians, feeding into the IRPTN network vision. The C9 route implementation links directly to the planning and proposed time frames required for the Northern Urban Development Corridor (Cornubia and Northern Aqueduct Project), again illustrating the eThekweni's spatial planning goals being achieved by the IRPTN.

CHALLENGES & LESSONS LEARNT

Challenges the municipality are experiencing such as delays in regulatory approvals, construction running behind schedule, technical design difficulties, escalations in implementation cost and difficult negotiations with taxi organisations, bus companies and service providers are not unique to eThekweni Municipality. Through phased implementation of Phase 1, the City was forced to think on its feet and adapt to the change being enforced.

With the great successes highlighted, there was a trailing path of obstacles, challenges and risks that had to be overcome. The C3 corridors greatest challenge was implementation of a trunk route that was not designed. Due to the need and urgency to spend the PTISG yearly allocated budget, the Go! Durban team did not have sufficient time to plan the construction and detailed design effectively. Utilizing the preliminary designs, construction contracts were awarded in September 2013. Construction drawings were issued to the Contractor as and when it was ready by the consulting teams, notwithstanding the fact that this was a pilot trunk route with numerous unknown technical factors. The delays in completion of the C3 route was attributed to the lack of a completed design for the entire works as the Contractor could not plan ahead. Despite the crippling conditions, the Go! Durban Team, consultant and contractor must be commended for producing the framework trunk route that pioneered the IRPTN in eThekweni Municipality.

In moving ahead with other packages on C3, the construction contracts were delayed to an extent to allow for the detailed designs to be completed timeously. For the roll-out of C1 and C9, it was imperative that the entire route was completed to detailed design stage prior to construction, whilst ensuring uniformity among corridors. The routes traverse through densely populated regions, to sparsely populated linkage areas with a variety of land use zones ranging from industrial, residential, open spaces etc. Ensuring consistency along routes through utilization of standards derived at the preliminary phase was imperative. The Municipality tendered the design of a portion these works to Consultants in 2013. The other portion of C9 and C1 are being designed by the internal Go! Durban design team.

A further hurdle encountered during implementation was the importance of service relocation and expropriation prior to commencement of the works. This was a severely underrated risk that posed numerous delays and challenges to all involved parties daily. Implementation of the BRT Route through Pinetown required widening of existing roads to accommodate the two new bus lanes

and the 3m wide sidewalks aimed at promoting lateral separation of the BRT from other modes of transport and increasing pedestrian accessibility along the routes respectively. Expropriation was required for the complete C3. This process takes a minimum of eighteen months to complete, with preliminary design being completed in 2012, construction commencing in 2013 and detailed design completed in small portions, there was insufficient time and information to complete the process.

The C3 team engaged with owners through permission to occupy (PTO) agreements until the expropriations were concluded. This was a mammoth task, ensuring access, acceptance from the owner and ensuring the Contractor is not being delayed with the works. The service relocation is divided into two components – the external service providers and the internal departments. The external service providers have proven somewhat easier to work with as opposed to certain internal departments. The new concept of BRT and the nationwide implementation required a fast paced urgent approach from internal service providers, gaining buy-in within the Municipality departments has been a challenge and is key to the efficient mutually beneficial implementation of the IRPTN.

Learning from the service relocation and expropriation experience, C1 and C9 teams endeavoured to proactively engage with service providers and land owners prior to construction. The C1 route engaged with service providers and property owners notifying and seeking guidance to allow a smoother transition at construction phase. The planning of multi-disciplinary work was even more critical along the C9 route as the eThekweni Water and Sanitation's Northern Aqueduct Augmentation project was also due to commence on the Phoenix Highway. Two large scale major eThekweni Municipality projects required access and delivery simultaneously on the same trunk route in order to meet the needs of the rapidly developing northern areas of the city. The C9 route implementation links directly to the planning and proposed time frames required for the Northern Urban Development Corridor

The IRPTN implementation team was further challenged with the onslaught of business forums and taxi industry disruptions. Go! Durban's approach was to ensure policy requirements were met by implementing the Empowerment Charter on all projects. The ETA were the first to implement the newly developed strategy which was proposed to be utilized across the Municipality. The aim of the charter was to create jobs and skills development within marginalized communities. Being in the trial phase and unchartered territory, both the municipality and the contractors had to learn and embrace the new empowerment charter system.

This specification was further developed by Go! Durban and titled the Go! Durban Radical Economic Transformation Specification (GRETS) which established the rules for the implementation of an empowerment strategy for the provision of goods and services on the Go! Durban IRPTN in 2017. The specification has three focus areas namely Contract participation Goals for Equity and sub-contracting, Skills Development and Socio-Economic Development. (GRETS, 2017). This promoted local labour in surrounding communities and a means of up skilling emerging local construction companies. The GRETS also allowed larger contracting firms that were "stuck" at an intermediate CIDB grading the opportunity to create a joint venture with higher CIDB rated companies and scale themselves up through decent experience and exposure on larger projects. The GRETS further promoted the training and mentoring of graduates through an Aftercare Training Target, where the provision of employment for three years for newly qualified graduates was stipulated in the specification.

Dealing with business forums and disgruntled local groups is an ongoing challenge, however the GRETS aimed to bridge the gap of inequality and create meaningful opportunity for local communities, contractors and students entering the built environment industry. The GRETS illustrates proactive efforts by the municipality to create change and foster growth opportunities for all communities. Other key lessons learnt are summarised below:

- Keep construction sites small (approximately 2.5km) thereby ensuring project completion on time and keeping construction costs low. This allows for more opportunity for contractors and up and coming enterprises to grow with the implementation of Go! Durban IRPTN.
- Ensure a maintenance plan is in place due to the staggered nature of construction.
- Engagement and confirmed resolutions with all stakeholders prior to construction is a necessity to ensure project delivery and responsible project spend. Expropriations, service providers, interdepartmental units, taxi industry, business forums and all affected parties need to be included into the framework.
- Station construction requires concurrent programming for the platforms and superstructures to enable the timeously ordering of materials thereby reducing potential delays.
- The Go! Durban Programme should be the priority of the City and maintained at that level. The programme is a national key project, therefore similar attention, treatment, resources, respect and protection must be given and maintained. Prior to commencement of any project the availability of resources from the City must be determined (human resources, financial resources, stakeholder buy-in and support, management support, political support). City leadership and all the City's stakeholders must recognise this. It is not justifiable that a programme of this magnitude receives similar attitude and attention to that of a small contract. Special committees are required at higher level in the municipality to deal with the magnitude of IRPTN. The Go! Durban branch was created to be the unit that spearheads the implementation of the IRPTN, however support from the larger City is lacking.

CONCLUSION

Whilst there has been tremendous set-backs to the proposed operational start dates of Go! Durban BRT, it must be recognised that challenges faced and resolved, the partnerships created and the imparting of skills and knowledge to the numerous people employed is justification of the future impact the final IRPTN plan can yield. The ultimate aim for the government's plan for the IRPTN in all major cities was to facilitate subsidised public transport systems which would focus on reduced travel times, spatial transformation and addressing the apartheid geography.

This has been achieved and some of the successes of the IRPTN roll-out plan are:

- Ten world-class stations completed on C3 Route with state of the art technology introduced. These stations provide iconic landmarks for the face of the City.
- Urban regeneration in the Pinetown CBD through the inclusion of the BRT traversing this densely populated area. The infrastructure of the BRT and the precinct area accommodates non-motorised transport modes, provides a safer environment and achieves urbanity. This has promoted a more liveable, easily accessible CBD indicating the potential the BRT has to transform the lives of commuters, business owners and the public. The positive impact on the economy is evident from the various economic opportunities created by the accessibility of the new infrastructure.
- World-class design of two major bridges (M25/Bhejane Underpass Bridge and Cornubia Bridge) linking the northern areas to the greater eThekweni Region. These bridges illustrate the capacity within the Municipality to tackle difficulties in rectifying the historic spatial plans through innovate linkages and partnerships to ensure service delivery. The internal municipality's team involvement on the Bhejane Underpass is commendable illustrating the municipalities drive to strive for technical excellence.
- Staying current with changes or improvement in technologies is key to ensuring a world class system is delivered to the City– incorporating this into BRT implementation with the use of latest pavement technologies, Kassel

kerbs for bus docking at stations, tactile paving, Universal Access compliant stations and unique bridge designs to list a few.

- The partnerships between the different spheres of government, parastatal entities and the private sector have been the key driving force to ensure the public transport goals are met. Spatial transformation requires the large scale intervention from both public and private sector to propel infrastructure implementation in the City. The Bhejane Underpass and Cornubia Bridge were joint ventures between a private developer and eThekweni Municipality and the construction of the MR577 was a joint venture between two spheres of government, KZN DoT and eThekweni Municipality. This combination of goals was proactive planning by the Municipality with the public-private partnership and inter-governmental partnership in facilitating the creation of inclusive, compact urban precincts, linking people to opportunities and accelerating development to build a new mixed-used city centres in Cornubia and Pinetown.

Through innovative solutions, inclusion of the local communities, collaborative partnerships between different spheres of government and private sector, and lastly complete support from all municipal departments – the challenges faced by Go! Durban can be overcome and the implementation of IRPTN can be a remarkable success for the eThekweni Municipality.

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