

THE FUNDAMENTAL RESTRUCTURING OF DURBAN'S PUBLIC TRANSPORT SYSTEM: An Overview

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Abstract

The National Department of Transport (NDOT) has recently formulated policies that significantly change the way transportation is to be planned and administered in South Africa. The NDOT, in partnership with the other spheres of government, often tests some of these policy changes through pilot projects in selected major cities to lead the way and gain valuable insight into implementation issues.

The Fundamental Restructuring of Durban's Public Transport Network is one such project. It was started in April 1999 and is due to be completed in late 2001, and is a joint venture between the National and Provincial Departments of Transport and the Durban Metropolitan Council.

This paper gives a broad overview of the project and sets out:

- the nature and necessity of the project,
- the underlying principles and logic of the project,
- the management of the project,
- the specific objectives of the project, and
- the main challenges of the project.

It should be noted that this paper is part of a series of papers that cover the entire project. This paper gives an overview of the project. The other papers which deal with specific tasks are as follows:

- (i) Development of a least cost strategy for Durban's Public Transport System
- (ii) The Fundamental Restructuring of Durban's PT System: The User Preference Study
- (iii) Towards tools and measures for the creation and sustenance of a land-use regime in support of the high priority public transport network

It should also be noted that this project has yet to be completed, and therefore the final outcome cannot be fully reported on in this paper.

1. INTRODUCTION

The fundamental restructuring project was established almost two years ago as critical study to re-examine the characteristics of the public transport system in Durban and to develop options which would significantly improve public transport. The objective was to enhance the integration between parts of the system and make much better use of public transport subsidy.

Durban, in close similarity to other South African cities has developed a public transport system which is poorly integrated and retains a rigid distinction between formal and informal modes. The result is that modes often compete on the core corridors where demand is highest and in other areas where demand is lower the system does often not provide an adequate service. The implication is that there are often more routes than are required and in the formal sector these are often operated at extremely low frequencies. As is clearly shown by the outcome of this study in Durban, it is possible to consolidate many of the operations and make much better use of the different types of vehicles in the system. The study shows that larger lower cost per passenger vehicles, such as rail can be much better utilised in the high demand corridors. In such corridors lower capacity higher cost modes such as minibus-taxi should be restricted over time. Such vehicles would provide better services in lower demand areas where smaller capacity vehicles could be used to enhance frequencies. Vehicles such as buses could usefully fulfil a role between these two extremes in the public transport system.

Obviously, changing the focus which current operators now have and assisting them to focus on other parts of the network is going to be a considerable challenge. However, as the study clearly shows there are significant financial advantages to operators for operating in this way.

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As the title indicates, this paper is a broad overview of the project, and sets the scene for the above mentioned papers.

2. PROJECT INITIATION

This section sets out the various processes that were foundational to the development of the Fundamental Restructuring of Durban's Public Transport System (FRDPTS) project.

2.1 White paper on National Transport policy

In 1996 the National Department of Transport (NDOT) developed the White Paper on National Transport Policy. The White Paper set out the vision for transportation in South Africa and dealt with some of the more immediate problems in the transport industry.

Vision

“Provide safe, reliable, effective, efficient and fully integrated transport operations and infrastructure which will best meet the needs of freight and passenger customers at improving levels of service and cost, in a fashion which supports government strategies for economic and social development whilst being environmentally and economically sustainable.”

The policy proposes significant changes to the way things have been done in the past.

2.2 Moving South Africa

Following on from the White Paper, the NDOT formulated “Moving South Africa - The Action Agenda”. As opposed to the White Paper with its short to medium-term focus, the Moving South Africa (MSA) initiative is a long-term strategy to guide transport for the next 20 years. It is essentially a strategic action plan to realise the vision set out in the White Paper.

MSA has integrated all parts of transport into a common vision and plan. It covers freight transport, rural and long distance passenger transport, urban passenger transport, tourism passenger transport and special needs. For the purposes of this paper, only the urban passenger transport section has relevance.

The MSA strategy is ground-breaking in that for the first time in South Africa the transport customer is placed at the centre of the decision-making process. The strategy also aims to meet the nation's key national objectives of mobility and economic competitiveness i.e. the nation is also seen as a customer.

The MSA study determined that 32% of South Africa's urban population (6.9 million people) either could not afford to travel at all or were captive to the cheapest mode of transport. Also, the subsidy paid by National Government to public transport exceeds R 1 billion per annum. Much of this is spent on competing services that are substantially underutilised. The clear conclusions drawn were that:

- there is a lack of affordable basic access
- the public transport system is essentially failing its customers

Some of the relevant key strategic actions identified were:

- densify transport corridors to lower system costs
- optimal use of modes to meet customer needs

Practically, this amounts to restructuring and redesigning the public transport system to meet customer needs at least cost.

The NDOT therefore initiated the FRDPTS Project as a flagship project in partnership with the KwaZulu-Natal Department of Transport (KZN-DOT) and the Durban Metropolitan Council (DMC). The Agreement which forms the legal relationships and responsibilities of the parties was signed by the Metropolitan Council on 1 April 1999. This project is seen as breaking new ground in the public transport field in the country.

Figure 1 below shows the process in diagrammatic form:

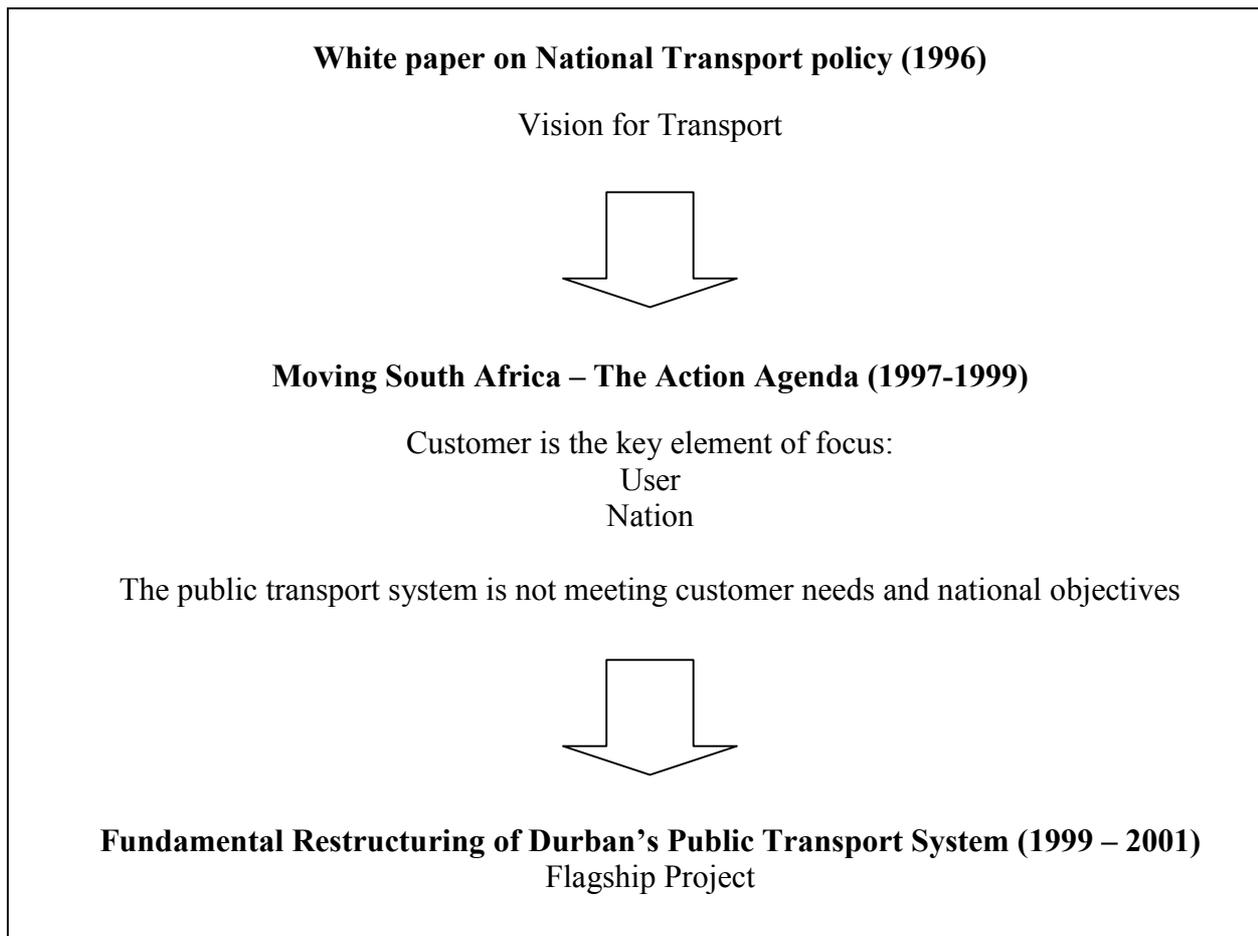


Figure 1: The processes resulting in the Fundamental Restructuring Project

3. PROJECT OBJECTIVES

The mission statement of the Fundamental Restructuring project is as follows:

The Fundamental Restructuring project is aimed at providing an integrated, sustainable and cost effective public transport system which maximises the mobility of users and is in harmony with the evolving land use structures.

The project is essentially about the **planning** and **design** of a public transport system for Durban that meets passenger needs, is cost effective and is in harmony with the land-use plan. The implementation of the project will be pursued in a following phase.

4. PROJECT LOGIC

The process of restructuring an entire public transport system is complex.

The study began by taking a strategic perspective in public transport integration in Durban. This entails assessing the origin destination patterns of passengers across the Durban region and identifying the potential to form a consolidated set of corridors and nodal interchange points. This

macro study was initiated through the use of various macro modelling tools. The outcome of this exercise largely reiterated what was already known and the existing dominant corridors were identified. The outcome did however indicate a number of potential interchange points which were either not well developed or did not serve as interchange points at all.

The task that followed from this was to identify the type of modes which would be most effective in providing services in these different demand corridors. This work included a range of mode types, many which were not currently in operation in the Durban area. It was clear from this exercise that bus could provide a number of distinct services across the metropolitan areas and that rail needed to concentrate on the highest demand flows.

The next task involved a much more detailed modelling exercise in which various scenarios were tested. This included using various modes in various parts of the network and adjusting the extent of integration between modes. The results of this process show the value of a more strategic design process and as is shown in a later paper indicate that considerable saving in operational cost and hence subsidy are possible.

Making significant changes to any public transport need to focus on the needs of the user as well as the cost of operating the system. Clearly users are averse to considerable system changes and in some cases find the older system more closely matched to their needs. For this reason a stated preference technique was used to identify the willingness of existing public transport users to change their trip patterns to become more aligned to the new system. The technique identified that users had certain preconceived notions of what existing parts of the system could provide. However, it was clear that provided that significant improvements were made users were willing to make changes. Thus, although the project has indicated that significant cost savings are possible, these may require a significant pre-investment in getting the integrated system to function effectively.

Figure 2 below sets out the basic sequential project steps that were followed.

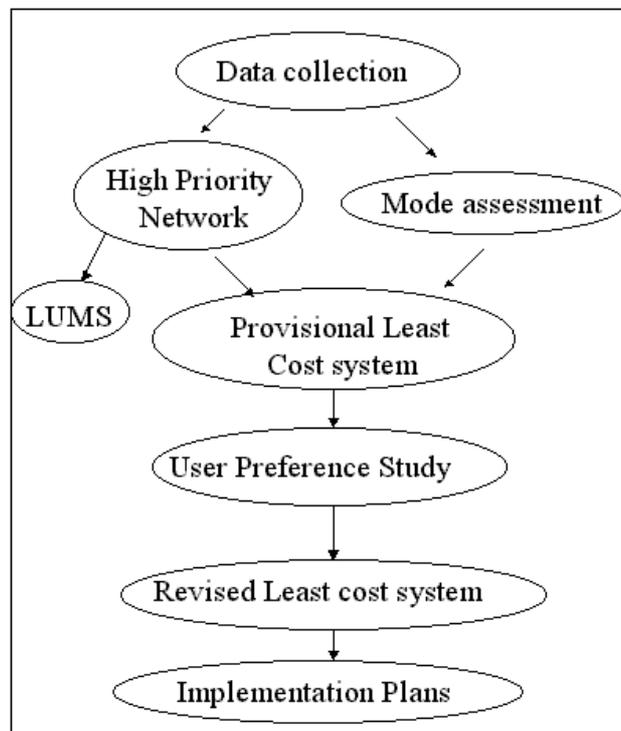


Figure 2: Project logic

5. PROJECT PROGRAMME

Figure 3 shows the programme and time frames for the various tasks of the project.

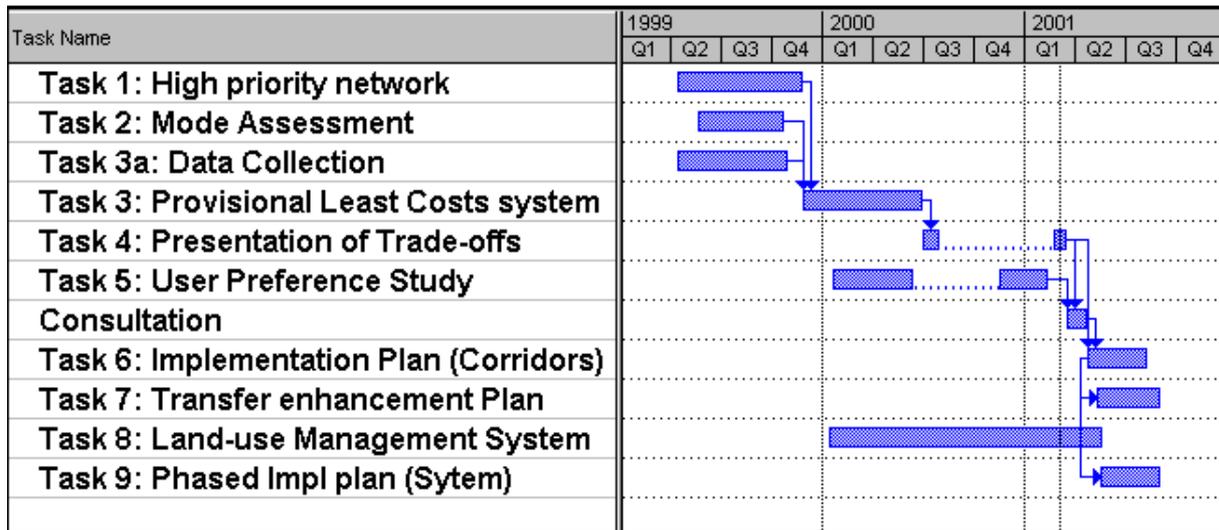


Figure 3: Project Programme

A more detailed description of the main tasks listed in Figure 3 are given below:

Data collection

It is important that the base data upon which the analysis rests is accurate and up-to-date. This task therefore involved the collection of detailed origin-destination movement of all public transport passengers in the DMA. A critical element of this task was to expand beyond the initial requirement of the Department of Transport to collect utilisation data only. On-board surveys were used for the bus and minibus taxi data together with screenline counts and interviews and established comprehensive origin-destination data which could be used for detailed modelling of passenger flows across the public transport system.

Identify a high priority network of nodes and corridors

The integration of land-use and transportation planning has long been identified as a key component of the City's sustainability. The final public transport system needs to support the existing and future nodes and corridors in the Durban Metropolitan Area (DMA).

This task involved identifying the major nodes and corridors in the DMA together with the dominant public transport transfer point and movement corridors.

Mode Assessment

Any attempt to design a least cost public transport system needs to have a clear understanding of modal economics. This task therefore identified the full costs of providing and operating existing and potential modes from a common costing basis.

A least cost public transport system

The existing system is characterised by duplication, underutilized services, destructive competition on routes and the uneconomical use of modes. There is a lack of integration and co-ordination.

The restructuring of the system, while maintaining acceptable levels of service, needs to reduce costs by:

- Using the various modes cost effectively
- Ensuring the vehicular capacity is well utilised by removing duplications from the system
- Ensuring full integration and co-ordination in the system which maximises the use of the dominant corridor flows.

This task tested and compared ten different public transport strategies from a cost, level of service and operational point of view.

User Preference Study

A key aspect of the Fundamental Restructuring Project is an understanding of how the public transport user makes choices in the system and which service attributes are important. The final system must meet the needs of the customer and be attractive if it is going to be effective.

This task involved extensive commuter interviews and focus groups to gain an understanding of commuter needs.

A Land-use management system (LUMS) which supports the public transport

Land-use has a major effect on the efficient utilisation of a public transport system. The only sustainable solution for the future development of the City is to ensure that the land-use management system supports public transport utilization and vice versa.

This task identified the specific land-use tools and measures that could be used in the high priority network to support public transport.

6. PROJECT FUNDING

All three spheres of government have contributed to the Fundamental Restructuring Project as follows:

NDOT	R 2,75 mill
KZN - DOT	R 1,0 mill
DURBAN METRO	R 2,75 mill
Total	R 6,5 mill

Table 1: Project Funding

This budget is for the planning and design of the system, and does not include implementation money.

7. PROJECT ARRANGEMENTS AND MANAGEMENT

Figure 4 below shows the institutional arrangements for the project.

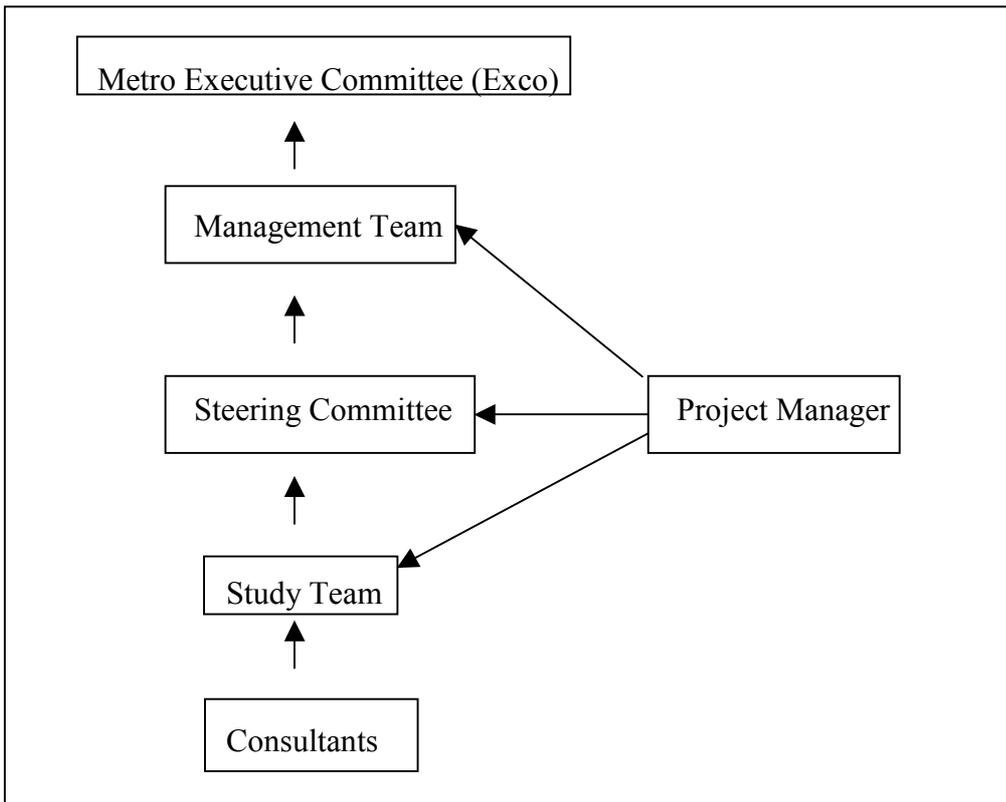


Figure 4: Institutional arrangements for the project

7.1 Metro Exco

Metro Exco is the ultimate decision making body and responsible for the project outcome. Since the initiation of the project, the new UniCity Council has come into being, and it will now be the final decision making body.

7.2 Management Team

The Management Team is the reporting arm of the Steering Committee. It meets as and when required to resolve any issues in between Steering Committee meetings. However, major issues are referred back to the Steering Committee.

It generally consists of a representative from each sphere of government, the Project Manager and the Director (Traffic and Transportation).

7.3 Steering Committee

This Committee is responsible to give broad guidance to the project, control the budget, monitor the progress and ensure that the various aspects of the project are properly integrated.

This Committee generally consists of the Management Team and the representatives of other relevant Metropolitan Council Departments such as Finance, Legal, and Land-use planning.

7.4 Study Team

This team is the core group that supervises the various tasks that need to be undertaken. It meets fairly frequently.

It consists of the Project Manager and a representative from the various Departments that are directly related to the tasks that need to be undertaken.

7.5 The Project Manager

The Project Manager, Mr. A Aucamp, manages the day-to-day aspects of the project and carries out the decisions of the Steering Committee.

He sits on the Management Team, Steering Committee and the Study Team.

8. PROJECT CHALLENGES

It has been acknowledged from the outset that this project will have many challenges. The public transport industry has been plagued by many and varied problems. Some of the key challenges that have arisen to date are listed below.

8.1 There are hard trade-offs to be made

At present many of the public transport routes are over traded. In order to introduce a rationalised, integrated system, hard trade-offs need to be made. In practice this will mean that some of the operators in the existing system will no longer have routes to operate. This will make any decision on the future public transport system controversial and contentious.

Political will and decision making will therefore be critical for the successful implementation of the project.

8.2 The task is extremely complex

There are a wide range of factors that impact on any public transport system, many of which are larger issues than just public transport. These include issues such as general law enforcement, crime, employment equity, labour issues, future spatial development etc. Such a strategic exercise cannot possibly take all of these into account to the same degree, nor can it resolve some of the wider issues.

This is of concern as firstly some of these wider issues could jeopardise the implementation of the project.

Secondly, this leaves the project open to criticism by groups who's peculiar issues have not been directly addressed.

8.3 There are other initiatives or projects which affect the public transport industry that have not been co-ordinated

The new legislation has generated many initiatives seeking to bring about change in the public transport industry. There are initiatives that are currently underway which ideally should only be started once the Fundamental Restructuring project is completed and a strategic, long-term plan is

in place. These initiatives could therefore potentially undermine the implementation of the Fundamental Restructuring Project. Such initiatives include the bus contracts which invariably are designed with little regard to the other modes.

8.4. The implementation initiatives will need to be carefully planned

Making significant changes to the public transport system while retaining an effective service to users and some guarantee of profitability to operators is going to be a significant challenge in planning and implementing changes in the system. It is clear that changes will have to be carefully phased and that massive changes will not be possible over night. Some of the initial phases may also require high levels of investment in support of the high demand corridor based modes before any significant savings may be generated through consolidating the complex route structure. The implementation initiative will therefore require clear phased initiatives coupled with long term political support to be effective.

9. CONCLUSION

There is a growing awareness of the importance of our country (and City) becoming globally competitive. A cost effective and efficient transportation system is fundamental to achieving this goal.

The Fundamental Restructuring of Durban's Public Transport System is a project that is breaking new ground in the public transport field in the country. It offers the opportunity to make a significant impact on Durban's public transport system in terms of cost saving and service standards. The lessons learnt and the methodologies applied will serve as a guide for the rest of South Africa to further restructure the public transport system and help the country along the road to global competitiveness.

REFERENCES:

1. White paper on National Transport Policy, Government Printer (1996)
2. Moving South Africa Agenda, National Department of Transport (1999)

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Biography

After completing his BSc Civ Eng at the University of Natal in 1990, Andrew Aucamp started working for the Durban City Council in January 1992. After spending one and a half years in the Roads Department, he moved to the Traffic and Transportation Department where he has remained to date. He has mainly been involved in transportation planning work. During this time he completed a post-graduate Diploma in Transportation from the University of Natal. He is married with two children.

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