



GAUTENG FREEWAY IMPROVEMENT PROJECT (GFIP)

2 SEPTEMBER 2014

PRETORIA – SOUTH AFRICA

ISMAIL ESSA



PROBLEM STATEMENT

- Travel times too long
- Volume of traffic increased by between 50% to 100% on various sections of the network (1983 – 2003)
- Quality of life impacted – increase in road rage incidents; increase in reckless driving incidents
- Increase in air pollution due to slow and idling traffic – global warming/ climate change
- Increased vehicle operating costs to road users
- Investors discouraged



PROBLEM STATEMENT FUNDING

- Very limited funding available from tax revenue, hence no appreciable capacity was added



BACKGROUND: APPROVAL PROCESSES

- Minister of Transport approved project - 2005
- Inter governmental (all spheres) workgroup agreed project principles
- DOT, SANRAL and Gauteng Government played leading role in compiling a document: *“Gauteng Network Integration Process: Proposal for a Gauteng Freeway Improvement Scheme”*
- This report was concluded in May 2006.
- Participants presented the report to their political decision makers for acceptance



BACKGROUND: APPROVAL PROCESSES cont.

- Project Principles are:
 - Promotion of public transport and Travel Demand Management (TDM)
 - Managing the demand for road space through road network management and ITS
 - Equitable and sustainable maintenance, upgrading and expansion of the strategic road network system (freeways and the public transport network)
 - Road user charging (User pay principle)



PROCUREMENT

Conventional (tender based on design) :
Quickest implementation model – well suited
FIDIC Conditions of Contract Red book - 1999
Although certain construction related risks are
transferred to contractor, contracts are add – measure,
allows for claims procedure, dispute resolution
procedure, least risk transferred to contractor
(implements a design with pre-measured quantities)



PROCUREMENT cont.

SANRAL follows procurement processes as per the requirements of Government in terms of the PFMA and the Construction Industry Development Board (CIDB) South Africa is participating globally in tenders Tenders for SANRAL projects are open, meaning that international bidders may submit tenders in terms of the procurement requirements of a specific tender



ROLL OUT

- In July 2007, the implementation of the GFIP was approved by Cabinet
- The project was required to ensure sustainable economic growth for Gauteng
- Doing nothing – not an option, since overall economic decline with associated economic opportunity and job losses will occur
- Due to funding constraints, the project was proposed to be financed through the user pay principle
- Following the intention to toll process, interested and affected parties made representations, the routes were declared as toll roads in March 2008 by MOT
- The estimated toll tariff at the time was 50c/km for light vehicles (March 2007 Rand)



ROLL OUT cont.

- Procurement for consultants was concluded in December 2006
- Procurement for construction works was concluded in April 2008
- Construction commenced in May 2008
- The final toll tariffs were announced in February 2011
- Following public concerns about the impact of toll tariffs, the MOT suspended the implementation of tolls
- The MOT appointed a steering committee to engage with stakeholders to determine reduced toll tariffs



PRINCIPLES EMPLOYED

- **Elements**
 - road ownership
 - >transfer from Province
 - 2010 World Cup influence
 - >milestones
 - >fast track
- **Political acceptance**
 - >principle of user charge
 - >promoting public transport
 - >traffic management



PRINCIPLES EMPLOYED cont.

- **Managing design integration**
 - 5 clusters
 - >traffic engineering
 - >geometric design
 - >pavement engineering
 - >structural engineering
 - >documentation standardisation
- **Managing construction integration**
 - 3 clusters
 - >Traffic accommodation
 - >Quality
 - >Supervision



CONSULTATION PROCESS WITH LOCAL AUTHORITIES WITHIN GAUTENG

This process was conducted with the following:

- Relevant Gauteng Provincial Departments
- City of Joburg
- City of Tshwane
- City of Ekurhuleni
- City of Mogale
- Sedibeng District Municipality

This was conducted between 2005 to 2007 at various levels and
fora



EXTENT OF PROJECT

PHASE 1: N1, N3, N12, R21

PHASE 2: N3, N4, N12, N14, R24, R59, M1, PWV 9

PHASE 3: N17, PWV 6, PWV 9, PWV 14, PWV 15



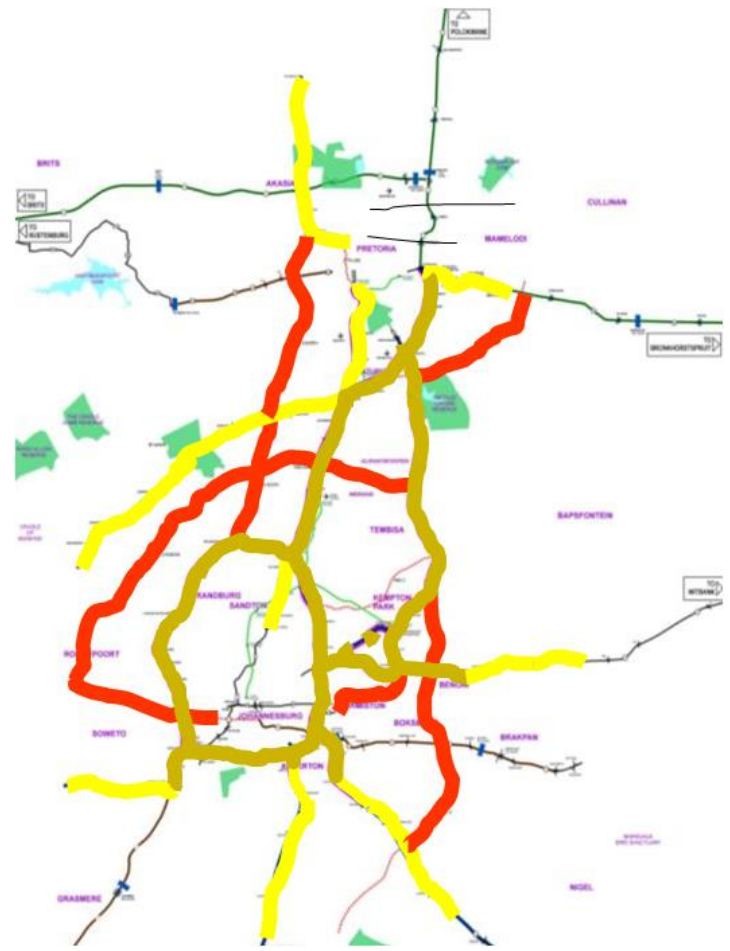
Phase 1 is shown in brown



Phase 2 is shown in yellow



Phase 3 is shown in red





PROJECT - DETAILS

- NUMBER OF PROJECTS

- ROADS = 17
- OPEN ROAD TOLLING (CONSTRUCTION AND OPERATION) = 1
- COMMUNICATIONS = 1
- INTELLIGENT TRANSPORT SYSTEMS = 1
- OPEN ROAD TOLL FACILITIES = 4
- CENTRAL OPERATIONS CENTRE = 1
- CUSTOMER SERVICE CENTRES = 4

TOTAL OF 29



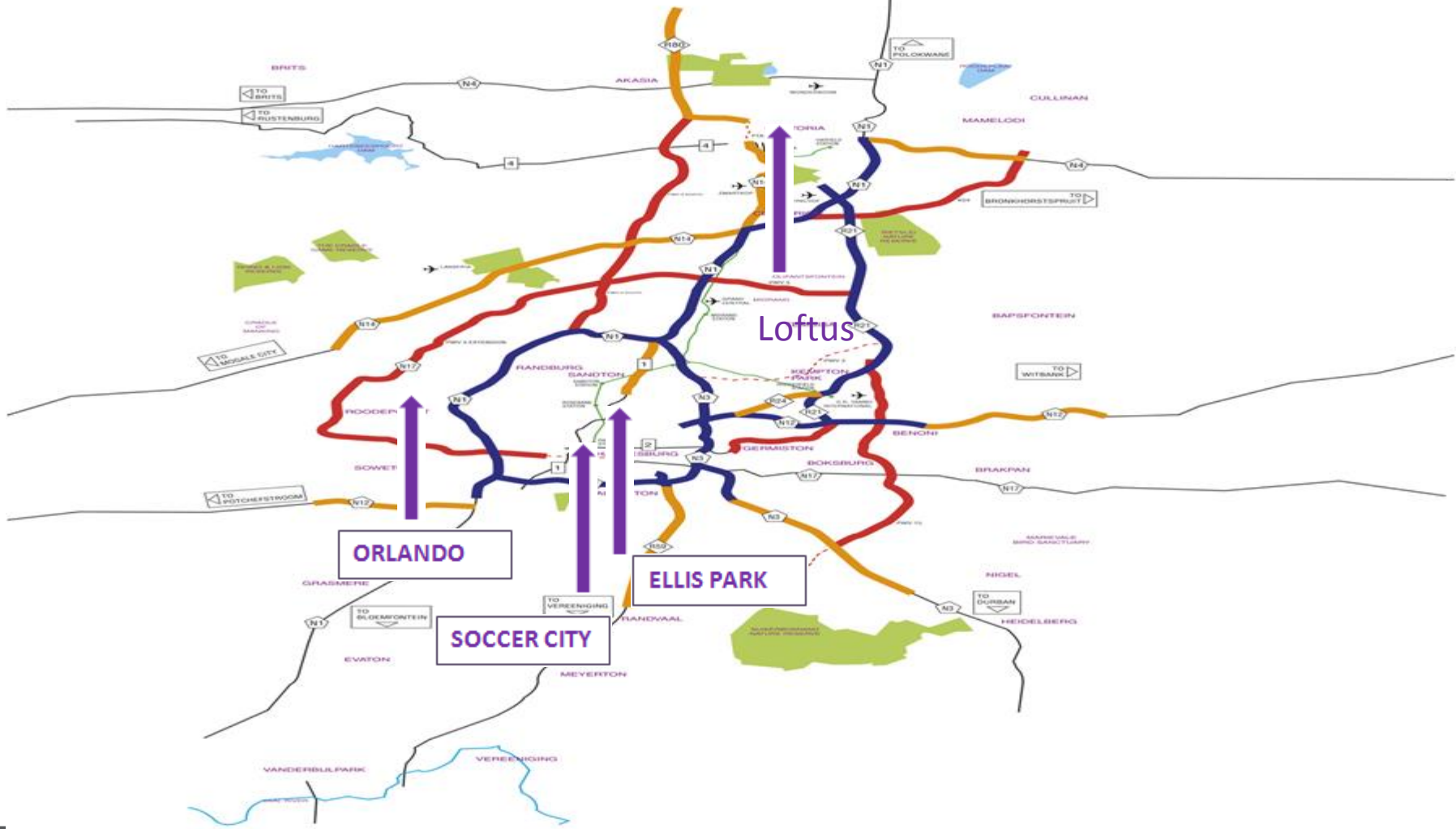
DETAILS cont.

EXTENT OF PROJECT (MAIN QUANTITIES)

- Length of highway worked on +/- 201km of dual carriageway simultaneously
- Additional Lanes – 585 lane km
- New Bridges –47
- Bridges demolished – 7
- Bridges modified/ widened - 134
- Incrementally launched bridges – 7
- Significant work in Interchanges - 34
- Additional lighting provided – 186km
- Number of Toll Gantries – 42
- New Fly Over ramps - 4
- New Jersey type median barriers – 127km



ROADS & STADIUMS IN GAUTENG PROVINCE





TIME FRAMES FOR DESIGN & CONSTRUCTION

- Design period (incl. environmental approvals) +/- 17 months
- Tender, submission, adjudication & award – 1 month
- Construction – 24 months for the work required for the World Cup plus 6 to 12 months beyond the World Cup
 - Package A = 24 months
 - Packages B, C, D1, D3, F, K, L = 30 months
 - Package E3 = 18 months
 - Packages E1, E2 = 36 months
 - Packages G, H = 20 months
 - Package J = 18 months



DISPUTE RESOLUTION

For such large, complex, fast tracked projects careful consideration had to be given to the timeous, equitable resolution of disputes. Dispute Adjudication Boards (DAB's) as in the FIDIC GCC was chosen to fulfill this role

5 DAB's were established in total. 4 of which had 3 members and 1 had just the 1 member



RECENT TRAFFIC GROWTH

From before to post GFIP upgrades (2008 to 2011), experienced between 25% and 46% increase in traffic volumes for different upgraded sections

Bulk of the increase – attraction from alternative/supporting roads

GFIP – 201 km from approximately 2600 km of major roads in Gauteng – latent demand on the network



ECONOMIC IMPACT

- CSIR Report (August 2001): Imperatives for a Toll Freeway Network for Gauteng:
 - Project should contribute R9b to GDP (2001 Rand)
 - Create 40 000 jobs (direct & indirect)
- Gauteng Province Report regarding impact of congestion (2004, Roelof Botha):
 - Every R1 billion (R1 000 million) spent results in nearly 9 200 (9 184) direct employment opportunities. In addition it has a multiplying effect of 1.5, creating therefore nearly 24 000 (23 878) job opportunities in total



ECONOMIC IMPACT – CONTINUED

- The Graduate School of Business – University of Cape Town (2010) An Analysis of the Gauteng Freeway Improvement Scheme:
 - Construction : 16 000 direct employment opportunities (25000 actual)
 - Operations: Over 1 100 direct employment opportunities (1700 actual)
 - Between 2008 and 2013: 21 400 indirect employment opportunities



CHALLENGES

- Tight time frames due to Soccer World Cup milestones
- Shortage of critical materials – aggregates and bitumen
- Skills shortages mainly at supervisory and skill levels
- Long working hours – night shift and weekends
- Working on “live” site – in traffic volumes of between 70,000 – 250,000 AADT



ELEMENTS OF SUCCESS

- Total commitment from industry - Consultants
 - Contractors
 - Suppliers
 - Sub contractors
- National pride at stake on international stage
- Experience personnel assigned to projects
- Speedy dispute resolution process
- Created many employment opportunities
- Opened up new areas for development - Commercial
 - Industrial
 - Residential (all levels)
- Improved economic development and growth, across the province
- Growth of small contractors accelerated



DISAPOINTMENTS

- The resistance to the user pay principle fuelled and fanned mainly due to political motives
- Should the resistance succeed it may lead to the discontinuation of the user pay principle to finance roads which will make it difficult in the future to fund road infrastructure



CONCLUSION

- This was truly a legacy project
- Our industry and the SA nation can be proud of the high quality standard of work produced on this project
- Many new people were trained and given the opportunity to gain experience on this project
- Reduced congestion and travel times
- Reduced VOC
- Reduced pollution
- Improved quality of life



THANK YOU

QUESTIONS