

What has the GFIP ever done for us?

BACKGROUND

In an infamous feature film, a question was asked: “What have the Romans ever done for us?” The initial response was dumb silence implying “nothing”. Here we ask a similar question about the South African National Roads Agency Limited (SANRAL) and the Gauteng Freeway Improvement Project (GFIP): What has the GFIP ever done for us?

If you are one of those who drive in the peak direction during the peak periods, you may well say “nothing”, and now we have to pay for it.

Not unlike the film, and with a little reflection, one has to acknowledge that there are some things that the GFIP, like the Romans, have done. In this article, we consider if the answer is in fact “nothing”, as the general public want us to believe.

WHAT ABOUT ROADS?

By 2008 the existing road pavements would have been approaching the end of their design life, and even before this the levels of congestion had reached unacceptable levels to the point of stunting mobility and economic growth in the province.

If there was no intervention in the short term on the existing road pavements, the condition of the roads would deteriorate rapidly, significantly increasing vehicle operating costs (CSIR Built Environment 2009). The rehabilitation work on the existing pavements has prolonged the life of over 200 km of the Gauteng freeway network, thereby ensuring that the user does not incur constantly and rapidly increasing vehicle maintenance costs. Just to add to the roads statistics, the GFIP comprised 585 additional lane kilometres, 265 km of fully reconstructed lane kilometres, significant capacity upgrades to 34 interchanges including four new directional ramps, widening of 134 existing bridges and 47 new bridges, 186 km of freeway lighting and the installation of an integrated freeway management system with CCTV and variable message signs (VMS).

The additional capacity on the freeways has benefits, some of these being measurable using the traffic models developed for the planning of the GFIP. We will get to these.

Apart from the roads, what has the GFIP ever done for us?

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TIME?

As alluded to above, the additional road capacity has reduced the morning and afternoon peak periods considerably. Unfortunately there just is not enough space or money to build roads that can cater for the total peak period demand within the peak hour. Therefore there are times when the upgraded freeways are running at full capacity. During these times the road user may experience travel times similar to before. However, those of us that travel during the shoulder peaks also continue to experience similar travelling times, but because these peak times are much shorter, we can travel at more civilised times of the mornings and afternoons.

Historic traffic data indicates that the peak period, being the time when the freeways run at full capacity, extends by 15 minutes per year due to the annual increase in traffic demand. The additional capacity on the freeways has reduced the peak periods on some road sections by 90 minutes. Compared to a situation where the GFIP had not happened, we are now saving approximately 80 000 vehicle hours during the morning peak alone. By 2025 this saving would have been 420 000 vehicle hours, and this additional time would be mostly in congestion with the cars idling at an average consumption rate of 0.6 litres per hour, with two peak periods per day and 220 working days per year – this equates to 21 million litres of fuel this year, increasing to 110 million litres by 2025.

During the day, between the peak periods, the additional road capacity has improved travel time reliability. This significantly contributes towards higher productivity, as there is no longer a need to allow contingency time to arrive at meetings and airports on time. This higher confidence in travel time contributes to lower stress levels and road rage incidents.

Apart from roads, and time (with fuel savings), what has the GFIP ever done for us?

HEALTH AND SAFETY?

Operational elements of the GFIP include intelligent transport systems (ITS), which include CCTV monitoring and variable message signs for disseminating information to drivers. Linked to this are SANRAL's response teams who secure the incident scene and provide primary medical response. SANRAL is also able

to dispatch recovery vehicles to remove broken down heavy vehicles in a much more efficient manner, so that traffic flow is restored as soon as possible. These roadside assistance services make the GFIP freeways a much safer driving experience. In addition, the removal of the grass medians of previous years has totally eliminated the possibility of making U-turns on the freeway, vastly improving road safety.

Apart from roads, time (with fuel savings), and health and safety, what has the GFIP ever done for us?

LAW AND ORDER?

Another operational aspect of the GFIP is the deployment of dedicated traffic officers to monitor and enforce road rule compliance. Unfortunately, with driver behaviour being what it is on our roads today, this is a totally unappreciated task. Assisting in this task, the toll gantries have the ability to track vehicles by using their number plates. In the event of a specific offence being committed – such as a duplicate number plate where the number plate does not match the vehicle – the gantry information can be, and has been, used to track and apprehend offenders.

Apart from roads, time (with fuel savings), health and safety, and law and order, what has the GFIP ever done for us?

EDUCATION?

SANRAL makes significant contributions to education, one of these areas being in traffic and transport engineering. Good traffic data in this field is very scarce and expensive to acquire. As part of the GFIP system, SANRAL has expanded the comprehensive traffic observation (CTO) footprint and has access to processed data from the toll gantries through the open road tolling system. Combining this data with other commercially available data, has put SANRAL and its research teams in a very strong research position, since this type of data is not readily available. As an example, where a roadside interview may reveal approximately 2 500 interviews per day (daylight hours only) and seldom runs for more than two days at one location, the gantry data collects data 24/7. In one month over 75 million entries were collected, being rolled up into over 34 million trips through 42 data collection points along 200 km of

freeway. For any traffic engineer/modeller this is awesome, provided we can use the data efficiently.

Apart from roads, time (with fuel savings), health and safety, law and order, and contributing to education, what has the GFIP ever done for us?

CONCLUSION

Although we could go on and include elements such as job creation and promotion of public transport, one should not forget that this project was ambitious from the outset. This is over and above the other thousands of kilometres of national roads operated and maintained by SANRAL. The GFIP entailed implementing certain modern systems for the first time in this country, relying on international 'experts' and following the letter of the law in procurement and project implementation, all of which have resulted in some valuable lessons learnt. At the end of the day we should reconsider the original question: What has the GFIP ever done for us?

Apart from:

- being able to continue to use the freeway network, with road pavements that are not continuously failing, and having dedicated teams maintaining the roads;
- being able to get up 30 minutes later in the mornings and spend more time with the family in the afternoons;
- being more productive during the day by spending less time in traffic jams or arriving at meetings very early;
- being comfortable in knowing that there will be a response to incidents without having to call anyone (personal experience);
- knowing that the GFIP is contributing towards adherence to the rules of the road;
- saving money because of reduced fuel consumption and less wear and tear on the engine; and
- having access to an unprecedented traffic data base to improve traffic models and other educational purposes;
- what has the GFIP ever done for us?

Personally I always look on the bright side of life, and the positives in most things in our daily lives then become apparent, including all the benefits of the GFIP.

And that's not all. For a mere 30 cents per km (or a fifth of my child's cell phone account), it's an absolute bargain. □