



THINK GLOBAL, ACT LOCAL

TRAFFIC ENGINEERING & TRANSPORTATION PLANNING

Traffic engineering and transportation planning is one of ITS's core fields of expertise and includes the preparation of Traffic Impact Studies, EIA Transportation Assessments, Traffic Modelling, Integrated Transport Plans, Traffic Calming Investigations, Parking & Circulation studies, Toll-road planning and feasibilities, Travel Demand Management studies and the Evaluation of Outdoor Advertising aspects. Whilst serving many private clients in land development, we combine our experience in road and transportation planning with our understanding of the authority's requirements to unlock the value of land through integrated transportation planning and ensuring efficient accessibility.

Key focus areas are:

Simulating the Future

The solution to any transportation problem needs to be analysed, modelled and assessed to determine if it will meet the future capacity requirements. The impact of future growth and possible delays on road networks is complex. A visible simulation will always assist to provide a better understanding of the foreseen impact. ITS provides transportation modelling services, which is a mathematical model of real-world traffic, using aaSidra, VISTRO, Paramics, Aimsun, Tracks, Traffix,

Saturn, HTM, HCM 2010 and HDM4. The specific project needs will dictate the model to be applied, however, it should be realised that traffic models always have some limitations when compared to real-life transportation decisions and can thus only be considered as one of the tools to assist with decision-making. ITS has always considered traffic modelling as a specialist function, with the success there-

of depending on the expertise of the professionals involved in the modelling process.

Recent projects include modelling the four-level grade-separated Solomon Mahlangu / M7 interchange in eThekweni with a construction contract value of over R1 billion, as well as the planned one-way couplet interchange across the R21 in Irene.

EIA Transportation Assessments

In recent years, the Environmental Impact Assessment process has become an essential element guiding the viability of a change in land use activities. This is applicable to the full spectrum of land uses, such as mining, energy, retail and office developments, residential developments and many others.

impacts are focused on all factors associated with increased traffic volumes, such as the capacity impact on existing road links and intersections, the impact on the road pavement, impact on adjacent residential areas, noise impact and others.

The identification of transportation related impacts are addressed as an input to the Environmental application process. These



Integrated Transport Plans & Traffic Impact Assessments

Integrated Transport Plans (ITP's) is a statutory requirement for Road Authorities (National Land Transport Act No 5 of 2009) and needs to be updated every five years. It however needs to be proactive and formulate strategies that stretch beyond five years.

infrastructure, law enforcement, facilities etc. The preparation of Integrated Transport Plans are of specific importance to local and other authorities to ensure that transportation planning is addressed in an integrated way to provide valuable information that will guide the implementation of transportation and related projects.

ITP's are written on local, district and metropolitan level in order to improve accessibility and travel times, reduce congestion, increase Non-motorised Transport and resolve parking issues; all at an affordable cost. Transportation does not exist in isolation, but is effected / shaped by other commodities e.g. land use, services,

ITS strive to ensure that Integrated Transport Plans are prepared, based on a sound technical basis, but also with due consideration to the practicality there-of.



Traffic Impact Assessments on the other hand is confined to a specific development / area. These studies are generally required by roads authorities in South Africa to evaluate the impact of a change in land use and are thus an essential element of the process to be followed by an applicant to obtain new land use rights. Development generates traffic which has an influence on the adjacent road network, however minimal it may be.

Calculations are made according to specific standards and guidelines to look at the expected traffic generated by a specific land use. In addition to the normal required trip generation, trip distribution, mode choice and assignment steps, followed by capacity analyses and the identification of possible road upgrades, ITS will assist the applicant further to ensure value for money is obtained.

Specific assistance is given to identify road upgrades, but to also ensure that a realistic first order road upgrade costing is provided to the applicant, taking into account physical site limitations which might impact on the final road upgrades to be recommended. The overall objective of ITS is to prepares Traffic Impact Assessments, with the objective to add value to the application process.

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Toll Road Planning & Feasibilities

The implementation of the user-pay principle to the financing of roads infrastructure gained ground in the past few years, not only in South Africa, but also in various overseas countries. Toll routes are not selected randomly. An intensive analysis is done of the travel demand, alternative routes, traffic generators, topography, construction costs, travel patterns etc. that would determine the most suitable route. ITS has been involved with the investigation of the feasibility of major toll road schemes, as an advisor to the

roads authorities. These investigations are generally challenging, as the needs of the travelling public are to be taken into consideration in the determination of the viability of the schemes. The projects cannot be evaluated only from a financial viability and bankability point of view, but due consideration need to be given to the socio-economic and environmental impacts associated with a toll road scheme.



Travel Demand Management Studies

The demand for transportation, especially in our urban areas, is growing from year to year. Cape Town is the most congested city in South Africa and the freeways around Johannesburg and Pretoria has exhausted available road reserves.

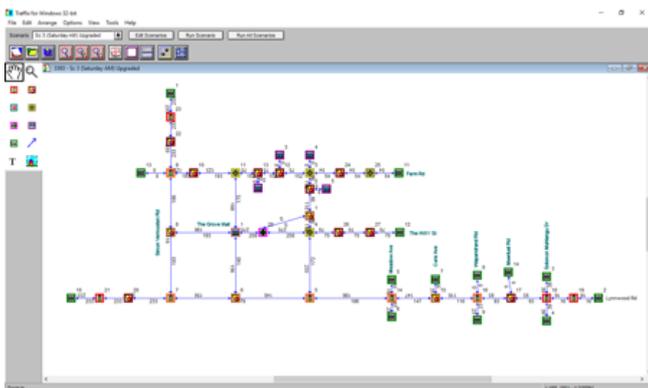
Various measures might be considered in this regard.

Demands like these puts pressure on the environment, infrastructure, time and space. The conventional approach of building more and more roads to address this growing demand cannot be sustained over the longer term, and supplementing measures need to be investigated. Studies need to look at the most economical way to distribute this demand in space or time to increase capacity.

Flexible work-hours, tele-commuting, ridesharing, improved public transport systems and others do not only alleviate congestion, but in so doing reduces the undesirable environmental footprint of transport. ITS specializes in Intelligent Transport Systems and has been involved in the SANRAL Gauteng Freeway Management System since its inception. Another project was the implementation of the first ever Parking Management Systems within a city in South Africa (City of Tshwane).



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