TRAFFIC IMPACT STUDY

Koleko Solutions
TRANSPORTATION ENGINEERING / PLANNING
What is a Traffic Impact Study or Assessment?

A traffic impact study or traffic impact assessment is a study which assesses the effect that a particular development has on the transportation network. A traffic impact study is generally required by roads authorities to evaluate the impact of a change in land use. These studies are a part of the mandatory process to be followed by an applicant to obtain new land use rights.

A traffic impact study may vary in complexity depending on the size of the development, the existing and proposed land use and the location of the development. Various traffic engineering concepts and principles are applied while conducting a traffic impact assessment. Koleko has conducted traffic impact studies for various developments comprising of residential, business, retail, industrial and offices. Koleko has also conducted studies for filling stations, mixed use developments and also transit oriented developments.

There are several steps within a traffic impact study, including trip generation, trip distribution, mode choice and assignment, which are then followed by capacity analyses. Based on the results of the capacity analysis, one is able to identify possible road upgrades required to accommodate the expected future traffic. Cost of road upgrades and the phasing of the upgrades are also determined.

Koleko Solutions has conducted several traffic impact assessment for various developers. We are familiar with the standards and requirements prescribed by the various authorities. While conducting the traffic impact study, we adhere to the standards and guidelines recommended by the national provincial and local municipalities. This ensures a quick approval process, thereby limiting delay to the development and the cost implication to the developer.

A traffic impact study is generally used to:

- Assess impact of traffic due to new development (or re-development)
- Support comprehensive plan amendments
- Support rezoning applications
- Support subdivision of land applications
- Obtain site plan approvals
- Obtain driveway or access permits
- As a part of environmental impact assessment
- Prepare traffic mitigation plans
- Determine developer /bulk contribution
- Determine cost apportionment
- Development access/egress and on-site circulation plans
**Orange Farms — Traffic Impact Study**

Koleko Solutions was appointed to conduct a traffic impact study for a shopping center in Orange Farms, Johannesburg. The study investigated the impact of the additional traffic generated by the proposed shopping center on the immediate surrounding road network and it determined the need for road upgrades to mitigate the impact of the anticipated traffic.

For the traffic impact study, traffic counts were conducted at the neighboring intersections during the weekday AM and PM peak period, in addition to Saturday midday period. Given the socioeconomics of the area and low car ownership, trip generation reduction factors were applied to the traffic impact study.

The traffic impact study found that the expected traffic from the development would have a negligible impact on the road network. One of the recommendations of the traffic impact study was that a taxi lay-by be implemented adjacent to the entrance of the shopping center. The traffic study also recommended that the sidewalk from the shopping center to the nearest public transport stop be upgraded, while complying with the design standards.

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**Lillanton Residential — Traffic Impact Study**

The Lillanton development comprised of 525 residential units and 10 000 sqm of retail in Ekurhuleni Metropolitan Municipality. Koleko Solutions was appointed to conduct a traffic impact study, to investigate the impact of the development.

The development was expected to generate approximately 1120 vehicles per hour during the Friday PM peak hour and 1500 vehicles during the Saturday morning peak hour. The traffic generated from the latent rights in the surrounding area was taken into consideration. A micro-analytical model was developed to assess the impact of the traffic on the neighboring intersections.

Various scenarios were developed to evaluate the impact of the existing and future traffic in the area. Based on the findings of the capacity analysis, road upgrades were proposed to accommodate the traffic from the development.
Koleko Solutions conducted a traffic impact study for the residential development comprising of 60 units - 3600 sqm in area. The development is located within close proximity of public transportation services. The Metrorail station is located about 200m from the development. The area is also well served by mini-bus taxis. The road adjacent to the development was found to have high pedestrian volumes.

The study recommended that sidewalks be constructed internally to formalize and ease the movement of pedestrians. The turning radii and road widths were checked to allow the maneuvering of a standards truck (SU-9 design vehicle).

Van Riebeeck Park is a residential neighborhood in Ekurhuleni Metropolitan Municipality, that has recently experienced a lot of crime. In order to address this issue, the residents via the home owners’ association applied for road closures. Koleko Solutions was appointed to conduct a traffic impact study to evaluate the impact of the proposed road closure.

The objective of the study was therefore to evaluate the impact of the proposed road closures on vehicular traffic. The study also evaluated the impact of the proposed street closure on pedestrians and public transportation services using the streets.

In 2014, the Magistrate Court in Ladysmith was proposed to be relocated. Koleko Solutions conducted the traffic impact study for the relocation of the court. The new court would be about 4200 sqm in area.

Capacity analysis was conducted to evaluate the impact of the current and future traffic on the road network. Recommendations were made based on the findings of the study.
Why Koleko for Traffic Impact Assessment?

Koleko Solutions offers complete transport consultancy service and we have all the skills necessary to provide clients with a wide range of traffic engineering and transportation planning services. Our young and dynamic firm comprises of innovative and driven individuals with a variety of skill set including Traffic Engineering, Transport Planning, Road Safety, Town & Regional Planning and civil works related to roads and storm-water.

Although Koleko is based in Gauteng, South Africa, we provide traffic engineering and transport planning services all over Southern Africa. Our team has had experience spanning over South Africa, Botswana, Namibia, Mozambique, United States of America and India. We partner with other firms both locally and internationally, bringing in a wider range of skills, technical knowledge and expertise in the field of civil engineering.

Our employees are actively involved in various professional organisations such as South African Institute of Civil Engineers (SAICE), Engineering Council of South Africa (ECSA), Transportation Research Board (TRB), Institute of Transport Engineers (ITE), South African Planning Institute (SAPI) and South African Council for Planners (SACPLAN).

Our clients include:

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