



# ICE Exam case study

## Wamala Ward

W: [ice.org.uk](http://ice.org.uk)

Wamala Ward in Nansana Municipality, Wakiso District, is a recently urbanised area of Kampala. This once rural area of 8 km<sup>2</sup> expands a quadrant of the Ugandan capital outward. Its population has trebled over the past decade and is forecast do so again by 2035. In the longer term there is a need for radial transit corridors, each capable of carrying 40,000 passengers per hour in each direction. Agriculture has given way to urban employment, especially commerce, as the major source of household income. Land prices are rising as development proceeds. Building materials are currently inexpensive and wages for the unskilled are low in comparison to the developed world.

Local Government has developed a 20-year Wamala Development Strategy (WDS) to transform the economy, to improve the health and wellbeing of communities and to protect and enhance both the natural and built environments. The Ugandan Government has approved the strategy and with the support of the World Bank has allocated Infrastructure Development Grants linked to performance targets to be reviewed every five years. The grants will be repaid through increases in local taxes as the economy grows. The government is determined to address endemic corruption (Transparency International ranks Uganda 140 of 180 countries) and ensure that investment is well-managed through effective procurement and contract management practices.

Services and infrastructure are provided and maintained by local and national government. Water and sanitation provision is nationalised, with electricity distribution by a public-private partnership. Construction of infrastructure has in the past been delivered by foreign contractors, with projects being financed by national and city taxes and private investment.

Wamala is hilly and is bounded to the west and north by papyrus swamps. It is located midway between two larger paved national roads. The area contains a 'cultural site', in the form of a large, thatched hilltop tomb of Kabaka Ssuna who died in 1856.

Complex land-ownership patterns have resulted in rather different settlement forms. At one extreme plots are small and mostly occupied by buildings with rooms to rent. At the other, areas recently connected by public transport have larger plots and more owner-occupier buildings. Most of those that have settled have moved out of Kampala, or to avoid flooding. Some prospective owners/tenants are put off by the high cost of commuting into the capital.

Journeys to work are inhibited by high fares. The high number of children in the area generates numerous school trips. Public transport is mainly by shared minibus or motorcycle taxi. Bus companies never last long as taxi fares are cheaper. Car ownership is growing, but there is insufficient parking in the city. Conditions for pedestrians, whether moving along roads or across them, are universally poor. Walking along roadways is the norm as there are no pavements. There is no rail transport in or near Wamala. A suburban rail service on the opposite side of Kampala carries relatively few passengers per day but operates at a lower fare than the taxis.

Primary roads closer to the capital are of a good standard, but roads within Wamala are poor. Earth roads are maintained by periodic scraping to re-establish the camber and fill in ruts and rain-formed gullies. There is little or no street lighting. Drainage includes naturally formed gullies, unlined ditches, open ditches, covered channels, pipes and culverts, with connections from roadside drains to natural watercourses. There is some scope for, but little use of Sustainable Urban Drainage Systems.



Figure 1 Existing roads and drainage channels

A 20-year Infrastructure Delivery Strategy (IDS) sharing WDS economic, social and environmental objectives will guide development. The IDS focuses on transport, water supply sewerage and drainage infrastructure. A performance framework for energy and telecommunication partners is being prepared. Schools, housing and business infrastructure is covered by planning frameworks focused on WDS objectives. The IDS aims to provide employment and training during construction, and in the operation and maintenance phases, through a local (Kampala) and wider Ugandan supply chain. In the short-term international contractors and suppliers must be engaged but the development of local capacity is central to the medium-term strategy. World Bank funding constraints include a commitment to UN Social Development Goals (SDG's).

As development continues there will be a need for a mass-transit route, such as a busway or light railway through Wamala, to connect the city centre to the suburbs. This will facilitate the development of housing and economic developments along each corridor.

Typically, water is supplied through communal wells, springs, ponds and gravity fed piped systems. Surface water is generally contaminated and has to be boiled. In developed areas communal piped water is available through paid kiosks, with richer households having their own supply. Water quality is always an issue. In piped systems the pressure fluctuates and locally goes negative which draws in contamination via any leaks. Springs are also polluted. In newly settled areas with pit latrines, any shallow aquifer may be polluted. There are almost no urban reservoirs to act as buffers or pressure regulators, so household tanks are used to combine rainwater storage with piped water buffering. The piped water system is of little use for firefighting. The city has a good water resource on its SW periphery, the vast Lake Victoria. All the conurbation's piped water is initially drawn from Lake Victoria and treated. There are a few deep boreholes with hand pumps.

Drainage design is concerned with peak flows and 'extreme' events rather than mean flows. The area is not subject to typhoons, cyclones or monsoons. Storms in general are localised. Drainage 'failure' can result in flooding, erosion of earth roads, pollution of springs, landslides and in standing water in which mosquitos breed. The functionality of the drainage system is limited because of its poor condition and lack of adequate maintenance. There are some settlement ponds to capture sediment which otherwise reduces drainage capacity. Sediment from these ponds is removed periodically and used to cover the local landfill site.



## Questions

1. What are the risks and opportunities of this development that can be addressed in the short, medium and longer term by adopting an appropriate procurement strategy, what might this strategy be and how should it be implemented and managed?
2. How might sustainability be achieved, including managing conflicting ethical issues?
3. During improvements to the drainage network a water borne disease breaks out. As project manager, outline the short and long-term actions you would put in place.
4. The construction of an early spine road requires materials not available locally. How would you manage reliable delivery? What are the leadership issues to be addressed in the longer-term supply chain programme?
5. By Year 5 of the project, delays and cost escalations threaten the implementation programme. Evidence of social, economic, and environmental benefit is scarce. You are appointed to develop and present a comprehensive plan to Nansana Municipal Council and the Government. How would you assure them that delivery transformation over the next 15 years will achieve IDS/WDS strategic objectives?