

Further information  
Skanska AB  
www.skanska.com

#### Contact

Noel Morrin,  
Senior Vice President  
Sustainability  
noel.morrin@skanska.se

# A1 Highway (Phase 1), Poland

## Case Study 2

Phase 1 of the A1 highway is a toll road in Northern Poland designed to improve motorist and pedestrian safety, local quality of life, stimulate the local and regional economy and minimise impact on cultural heritage and environmentally sensitive areas.

### Aspects of Sustainability

This project highlights the following:

#### Social Aspects

Human Resources  
Corporate Community Involvement  
Business Ethics  
Health and Safety

#### Environmental Aspects

Energy and Climate  
Materials  
Ecosystems  
Local Impacts

#### Economic Aspects

Project Selection  
Supply Chain  
Value Added



## Project Introduction

The 560km long A1 toll highway is to be implemented in phases from Gdansk in Northern Poland to Cieszyn on the Southern Polish border and will supersede the current Highway 1. Phase 1 of the A1 is currently under construction between Gdansk and Nowe Marzy in northern Poland. Construction of the 90km section began in early 2005 and is planned to open in November 2008.

The investor consortium Gdansk Transport Company S.A. (GTC) was awarded the concession to finance, design, construct, operate and maintain phase 1 of the A1 highway until 2039. Skanska BOT (Build Operate Transfer) owns 30% of GTC, and is leading the US\$650 million construction. Once operational the Polish authorities will pay GTC a guaranteed basic payment and supplements for traffic volumes through “shadow tolls”. The Polish government has identified the A1 as a priority project in order to establish the corridor as a main trade route and to improve safety.

The former 2-lane highway was one of Poland’s most dangerous roads, which was not designed for high-speed heavy traffic, bisecting towns and villages and had not been adequately maintained. Between January and October 2005 there were 48 fatalities along the most northerly 150km stretch of Highway 1 from Gdansk to Torun. In comparison the 4-lane phase 1 of the A1 will be highly maintained, providing emergency assistance and bypassing towns and villages, making the route safer and an estimated 30% faster. Phase 2 of the A1 concession has not yet been finalised.

## Contributing Toward Sustainable Development

In consideration of the substandard and inadequate Highway 1, Phase 1 of the A1 highway plans to improve motorist and pedestrian safety, local quality of life, stimulate the economy and has been designed to minimise impact on cultural heritage and environmentally sensitive areas. Accident rates are predicted to decline through



safer highway conditions, better emergency assistance and GTC initiated highway safety campaigns to improve the behaviour of local children and adults. Quality of life for local communities should improve as phase 1 bypasses towns and villages and is visually obscured at strategic locations. Improved accessibility is expected to stimulate enterprise and create jobs in the high-unemployment Pomeranian province. Phase 1 of the A1 has also been designed to meet stringent conservation regulations in order to minimise the impacts on environmentally sensitive areas and sites of historic importance the route passes through or near.

## Social Aspects

### Child highway safety campaign

Because many accidents on the existing Highway 1 route involve young people, GTC initiated a highway safety awareness campaign aimed at schoolchildren. The campaign was established in cooperation with the police and local education authorities and reached over 70 schools and approximately 15,000 children between March and December 2006. GTC trained and provided teachers with presentation materials to facilitate sessions with their students, although GTC staff visited 10 schools following individual school requests. The campaign identified dangerous roads on the journey to school, raised awareness of risks and promoted the use of reflectors. 20,000 free reflectors were distributed to improve the visibility of young pedestrians and cyclists at night and in low visibility conditions. The campaign also aimed to deter children from playing in the A1 construction site as GTC felt unable to adequately secure the 90km long site.

The school campaign was followed up by a safety quiz tournament, which tested and consolidated the highway safety awareness of local children and analysed the success of GTC's campaign. The winning child was featured on a safety poster used in local schools.

### Adult highway safety campaigns

Some schools have involved parents directly in their highway safety campaigns, although adult-specific initiatives have emphasised the dangers of heavy construction traffic and promoted responsible driving messages. Feasibility studies identified construction heavy goods vehicles to be a huge safety risk to communities not used to a high volume of large vehicles. In response GTC organised meetings, debates and presentations with local communities in cooperation with local authorities to highlight the dangers of heavy goods vehicle traffic. A GTC phone number was established to report construction vehicles driving dangerously. GTC also promoted responsible driving messages through supporting a charity concert and sponsoring the national billboard highway safety campaign "Slow down – its not worth life," in partnership with charities, the government and police.

### Highway safety precautions

The A1 bypasses towns and villages, has incorporated safety infrastructure into the design and safety precautions have been taken during construction. The A1 has been designed to bypass towns and villages in the interest of safety and local quality of life. Safety infrastructure such as pavements, safety barriers, junction lighting and road signage have been incorporated into the project to improve safety along the highway.

To reduce the volume of construction traffic and potential hazards on local roads, a temporary road network was created inside the A1 right of way. Once phase 1 is open, GTC is legally obligated to maintain the highway and provide standby emergency assistance to maximise safety. Emergency assistance will be provided by trained GTC staff who work in partnership with local emergency services.

### **Community communication**

GTC has held regular meetings with local authorities and communities affected by the project during the design stage. Approximately 25 meetings have been held with individual communities.

### **Improving local quality of life**

Phase 1 of the A1 project is expected to reduce traffic volumes, pollution and noise on adjacent arterial and residential routes, and in the towns and villages the current Highway 1 intersects. Settlements have been avoided, although approximately 110 individual buildings are within 20m of the highway fence line and the highway bisects two villages, which have been provided with pedestrian-bicycle crossing infrastructure to maintain access. Local people who use public and private road transport will benefit from the improved mobility and 30% reduction in highway journey times afforded by the project.

### **Heritage and cultural conservation**

The area surrounding the project is of special rural and historic value, and approximately 60% of the route impinges on protected cultural landscape parks. Consequently sections of the highway have been visually obscured to minimise the visual impact. Heritage sites and historic buildings will be protected from pollution and visual damage to the landscape by screens and embankments, such as the manor parks around the Kopytkowo junction. The junction near the town of Pelplin is being constructed from the opposite direction to minimise dust and fume damage on the Pelplin Cathedral. Archaeological surveys have also been conducted to ensure that no historic “amber route” sites were disturbed by the project.

## **Economic Aspects**

### **Economic benefits during construction**

GTC has aimed to maximise local economic benefit of the construction phase by prioritising local people for jobs and cooperating with the County Labour Office to ensure local people are informed regarding opportunities. However, due

to local skill shortages many migrant workers have been recruited. In August 2006 there were 1740 construction site jobs and 540 office based jobs. 35% of employees were from the Pomeranian region, 40% were under 30 years of age and men held 90% of the positions. Approximately 50% of the 300 construction contracts with various contractors, suppliers and service providers are with local companies. Economic impact assessments have suggested that the construction phase has stimulated local economic growth, estimating that between 6,000 to 10,000 indirect jobs have been created. Following the initiation of the project the unemployment rate in the region decreased by 11% from January 2005 to January 2006.

### **Safety campaign spending**

Until December 2006 approximately US\$23,000 had been spent on the school highway safety awareness campaign, and roughly US\$3,000 on sponsorship and the billboard campaign.

### **Local long-term economic benefits**

An economic impact assessment has estimated that reduced journey times, vehicle operating costs and accident rates as a result of phase 1 will boost the local economy by approximately 18% throughout the concession period until 2039. The project is predicted to have a multiplier effect on the local economy with an increasing number of businesses capitalising on the improved accessibility. In particular, small and medium-sized enterprises are expected to flourish along with tourism, which could create significant employment opportunities in the Pomeranian province where 19.4% of the population of working age are unemployed (end 2006). Already logistics companies have begun to establish themselves along the route and a new Post Office logistical centre is under construction in Gdansk. House prices in areas adjacent to the A1 have risen since the construction began in anticipation of improved access and economic development.

### **Regional long-term economic benefits**

The construction of the A1 is expected to increase Poland's share of goods transiting between Northern and Southern Europe and promote the country's integration with Northern Europe. The existing Highway 1 is already a major transport route with 70% of goods arriving at the Gdansk and Gdynia seaports continuing south to Central Poland and Southern Europe. However, trade is predicted to increase as a result of the A1 project and infrastructure projects are already underway in Gdansk and Gdynia to develop

container terminal capacity and improve highway access between the harbour and the industrial districts. GTC has emphasized that the Polish government must effectively promote the region and take measures to ensure sustainable regional economic development.

## Environmental Aspects

### Minimising environment impacts

The Phase 1 route bisects 4 ecologically sensitive forest-wetland areas and runs alongside 3 km of the Bory Tucholskie proposed Natura 2000 site, which is a special bird nesting conservation area and contains several important animal migration corridors. These areas demanded compliance with stringent environmental laws and GTC invited conservation experts and organisations to debate the issues and conduct impact assessments, which concluded that special provisions be made for certain species, such as the construction of stork platforms outside the right of way. Ecological migratory corridors were also highlighted as being vital and are being maintained by 9 passages under the highway for large animals and 20 for small animals such as amphibians. Throughout the construction, tree felling and earth disturbances have been avoided where possible especially in sensitive areas.

### Prevention of runoff pollution

Sand filters and separators have been installed along the route to prevent highway rainwater runoff polluting sensitive natural environments. For example, the Highway 1 Nowe Marzy interchange runoff is not currently isolated from a major groundwater reservoir, but will be

once phase 1 is complete. Sealed evaporation ponds are being constructed where filtering has not been possible.

### Atmospheric and noise pollution reduction

Noise screens consisting of vegetation belts and earth embankments in accordance with the current land use have been created to protect residential areas, historic buildings and certain types of arable land from traffic and noise pollution. In total over 100,000 trees and plants will be planted along the route in vegetation belts that GTC is responsible for maintaining. The highway agency purchased a 20m wide belt of land on both sides of the highway, which will make it possible to provide future protection against noise and atmospheric pollution. GTC has offered to install strengthened windows in individual dwellings to reduce traffic noise.

## Learning From Good Practice

GTC has mitigated against project related highway safety risks with scarce resources by working closely with local authorities, schools and communities. Training teachers to facilitate sessions with schoolchildren has been particularly effective as the sessions can now be sustained with little input from GTC.

