ARGENTINA AND URUGUAY - THE MARTIN GARCIA CHANNEL

Case Study (Transportation)

Project Summary:

The Rio de la Plata estuary is nestled between Uruguay, Argentina, and the Atlantic Ocean. It serves as the waterway access to Buenos Aires, as well as for the Uruguay and Paraná Rivers, the Paraná Interior, and the upstream Argentine grain ports of Rosario and Santa Fé. Within the Rio de la Plata estuary, the average depth is between one and six meters, except in the two channels: the artificial Mitre Channel, parallel to the Argentine coast and the natural Martin Garcia Channel, parallel to the Uruguayan coast. The Martin Garcia Channel is 106 kilometers long, beginning near the city of Colonia del Sacramento, Uruguay, and ending at the Uruguay River, near Nueva Palmira, Uruguay.

Both channels have been sporadically dredged to various depths ever since the Martin Garcia Channel was first opened in 1892. Dredging of the waterways throughout the river basin has been an integral part of the MERCOSUR's plan, the trade agreement between Argentina, Brazil, Paraguay, and Uruguay signed in 1991. The objective was to make the transportation of goods more efficient and thereby improve the economy of the region. Increased shipping in the region and the need for a more efficient way to move bulk goods, requiring larger vessels, added strain to the existing channels. The Martin Garcia Channel, while more direct and a little deeper than the Mitre Channel, was not deep enough to handle the larger vessels that many shipping companies had begun to utilize, nor wide enough to accommodate multiple vessels concurrently. As a result, portions of the channel were limited to one-way traffic, causing significant wait times during periods of high traffic.

To address this problem and other concerns, a bi-national organization between Argentina and Uruguay known as the Rio de la Plata Administrator Commission (CARP) was created in the 1970s to oversee interactions involving the river. It accordingly commissioned a number of feasibility studies in the mid-1990s for the dredging of the Martin Garcia Channel. CARP wanted to dredge the shallow portions of the 106 kilometer long channel to grant larger vessels access to the naturally deep Paraná River. A Design-Build-Operate-Transfer Public-Private Partnership (PPP) was devised for this project.

In 1996, a 10 year concession contract was awarded to a private consortium for the dredging of 76 kilometers of the Martin Garcia Channel to a depth 9.75 meters and a width of 100 meters (the rest of the channel was already deep enough). This gave the new channel the capacity to accommodate vessels 245 meters long and 32 meters wide. The consortium also installed a navigation system of buoys and beacons to improve safety in the channel. The contract enabled the consortium to levy tolls on vessels based on tonnage and draught for a one-way trip in the channel as a way to recoup a portion of its capital investment. Payments from CARP for the consortium's services also were intended to help cover capital costs. Larger vessels than before are able to navigate the Martin Garcia Channel, leading to more transportation efficiency. Because the consortium monitors the tides, winds, and currents, vessels exceeding the design dimensions are still able to use the channel when certain weather conditions are met. The deeper channel has also aided in the development of the ports of Nueva Palmira and Fray Bentos, both in Uruguay.

The project faced a financial challenge in 2002 and 2003, because of the financial crisis in Argentina and Uruguay, which led to a withholding of some national payments to the consortium and forced several of the private sector partners to withdraw from the project.

Project Objectives:

Both Argentina and Uruguay sought to increase economic activity in the Rio de la Plata region, and to make the export/import industry more efficient. With a deeper and wider channel, larger vessels, and more vessels, would be able to conduct business in the area. Both countries would be able to ship agricultural products south to the seaports more quickly, and the connection of the channel to the naturally-navigable Paraná River would provide water-borne access to the interior of Uruguay, creating, in effect, a 790 kilometer channel.

The means for accomplishing this was through a public-private partnership (PPP) to deepen and widen the Martin Garcia Channel. CARP wanted the channel dredged to a total depth of 9.75 meters at zero tide and widened to between 90 and 100 meters at all points. With these dimensions, the channel would be able to accommodate the larger vessels that shipping companies were increasingly using, and accommodate two-way traffic, a major improvement over the conditions previously found.

Another objective was to maintain a balance between environmental and economy concerns – the project would need to have a minimal environmental impact on the estuary, while at the same time providing access for larger vessels. Dredging has the potential to cause detrimental damage

to an ecosystem and the private partner was required to avoid major long-term consequences. To this end, a vigorous program of water quality and sediment testing was maintained throughout the dredging phase of the project.

Project Description:

1. Partners

The consortium formed for this project included seven private companies. These business concerns included dredging companies from all over the world, including Europe and North America.

Selection of these companies came about through ultimately, in late 2003; all but one of the private companies withdrew from the consortium because of payment issues with the governments (see "Overcoming Impediments" below).

The bi-national CARP was the public partner. CARP also appointed a panel of public agencies from Argentina and North America to supervise and monitor the dredging completed by the private consortium and the long-term operation of the channel.

2. Legislative Environment

The Treaty of the Rio de la Plata and the Maritime Boundaries between Argentina and Uruguay signed on November 19, 1973 provided the legal framework for establishing CARP. CARP was granted the legal right to regulate issues related to the river, maritime boundaries, resources within the river, navigation of the river, hydropower, and any matter that pertains to the Rio de la Plata. CARP was empowered to enter into a PPP agreement with the private consortium because of its rights commissioned by the treaty.

3. Financial Agreement

The total project budget was set at US$180 million to construct, operate, and maintain the channel and for the private consortium to collect the tolls. The cost of the capital dredging to deepen and widen the channel was estimated to be US$100 million, with the rest of the budget going to operation and maintenance. The consortium would collect a toll on vessels using the channel, with the toll rates based on the tonnage and draught of ships using the channel. However, it was envisioned that the toll payments would not be sufficient to cover all the costs

related to capital recovery or maintenance. Setting the tolls too high would have the effect of depressing traffic, thus undermining the project's primary objective of spurring economic activity. Accordingly, the private partner would also receive payments from Uruguay and Argentina through CARP for their services. Overall bi-national government cost was estimated at $40 million, plus the opportunity cost of allowing the consortium to utilize some existing government equipment. The toll revenue collected would be reported to CARP and then deducted from the subsequent payments due from CARP to the private partner.

4. Contract Provisions

The procurement was conducted through an open, competitive procurement. CARP selected a double-envelop system for bidding, which required separate technical and financial-economic offers from each company. The technical offers were opened, made public, and accepted before the financial offers were opened. If a company's offer was rejected, it was able to submit for arbitration. Overall, this procedure proved to be very time consuming and expensive for the companies involved. In the end, after arbitration, the disputing parties formed the large consortium to participate in the project.

A ten-year contract between CARP and the consortium was signed in July of 1996. The contract required the design and construction of the channel, installation of navigational aids, collection of tolls, and maintenance of the system. The consortium was responsible for dredging the channel to a specified depth of 9.75 meters at zero tide, installing a buoy and beacon system to help provide additional safety in the channel, and collecting tolls from vessels utilizing the channel.

The agreement included two phases. The first phase of two years in length included designing the project, dredging the channel, installing the buoy and beacon system and establishing the tolling system. Under the second phase of eight years, the consortium was responsible for maintaining the channel depth and the navigational aids, and collecting the tolls.

The contract stipulated that the Argentine and Uruguayan governments, through CARP, would make payments to the consortium for the dredging and maintenance of the channel. Payments were made in lump sums in US dollars and subject to revisions based on an American Consumer Price Index. The objective was to minimize the risk for the consortium because it was still able to recoup some of its capital regardless of navigational activity in the channel.

5. Implementation Metrics

Following the signing of the contract, the consortium spent three months reviewing the feasibility studies and using a hydrodynamic model to study currents and water levels in the Rio de la Plata. Computer simulations tested the maneuvering ability of the design ship to figure out the best route for the expanded channel to follow. The design was finalized in October and approved by December of 1996.

Dredging commenced in January 1997 near Nueva Palmira, Uruguay, at the mouth of the Uruguay River, which is the upper end of the channel. Several different kinds of dredgers were used depending on the quality of riverbed material and the original depth. The material consisted of fine sediments (silt and clay), gross sediments (sand and gravel), and hard materials (volcanic debris and rocks). During the initial dredging, 44 million cubic meters of sediment were dredged. In the upstream part of the channel, where it was naturally deeper, the dredged material was discharged back into the river at a distance of 1,000 to 1,500 meters from the channel. The downstream portion of the channel was much shallower, with an average depth of only 5 to 6 meters – here, the dredged material was discharged between 2,500 and 3,000 meters away from the channel. Dredging was completed in January 1999 and the channel of 9.75 meters deep and 100 meters wide was reopened to navigation. The expanded Martin Garcia Channel is able to accommodate vessels up to 245 meters long and 32 meter wide.

To promote safety in the widened channel, 122 buoys were installed to mark the channel boundaries, reduced depth zones, isolated dangers, such as wrecks, and channel forks. The system was state-of-the-art and met the requirements set forth by the International Association of Lighthouse Authorities, which has been internationally recognized as an authority since 1980.

For the remainder of the contract period, the consortium did maintenance dredging to remove any sediment that settled in the channel. About 6 million cubic meters of material were dredged each year to keep the channel operational at 9.75 meters.

CARP and the consortium established a tolling system for vessels that levied a toll for each one-way passage of the channel. The tolls were collected by the consortium, based on tonnage and draught. The base toll rate was US$1.65 per net registered tonnage (NRT) and was subject to a base buoyancy rate (3.8%) and a base dredging rate (17.06%). Tolls were established using the following formula:

Toll rate = (.0627 X NRT) + (.28149 X NRT X FC)

Where:
.0627 = base rate X buoyancy rate
.28149 = base rate X dredging rate
FC = correction factor

The correction factor equals the draught depth in feet minus 15 and then divided by the maximum design draught for the vessel when it is fully loaded. This was done to ensure that the tolls levied were fair.

Commentary:

1. Overcoming Impediments

In September of 2003, the consortium was owed about US$11 million. Payments from Uruguay had stopped in 2002 when a financial crisis hit the country, resulting in a major run on banks. Argentina did make some contributions during that time, but the debt continued to mount. For 2003 alone, CARP owed US$6 million to the consortium. Due to the growing backlog of payments and the lack of any visible resolution to the contract payment issues, all but one of the private companies withdrew from the contract with CARP, and ceased supporting the project.

2. Key Points for Success or Failure

The project had several points of success. The channel was deepened and widened, allowing for the passage of larger vessels than before. Shipping companies were able to move goods much faster to and from Uruguay, Argentina, Bolivia, and Paraguay. The interior agricultural regions were able to export their products to other parts of the world faster and more efficiently by using larger vessels. Thus the project succeeded in its primary objective of spurring economic activity.

The project also met the environmental objective of minimizing impact on water quality and sediments in the channel and adjoining areas. The consortium established an environmental plan to mitigate any disruptions caused by the dredging. Water and sediment sampling were undertaken to ensure that the dredging did not affect the water quality in the river. The

consortium also coordinated with other agencies in both countries to minimize the environmental impact of its activities.

This project also provides some important lessons when undertaking a PPP. Foremost, stability of the economic and political environment is extremely important for the long-term success of a PPP. In this instance, the project was successfully constructed, and operated as designed for several years. However, when Argentina and Uruguay suffered financial crises, both countries made unilateral decisions to cease or reduce the contractually-required payments to the consortium. The political will to continue supporting this project was no longer present.

All parties thought the risks to the consortium were minimal because it was receiving supplemental payments from CARP for maintaining the channel. However, relying in whole or in part on a country's government as a way to recoup capital should only be undertaken if the government and its economy are stable, or if international guarantees are provided (e.g., through The World Bank's Multilateral Investment Guarantee Agency, MIGA, which insures foreign direct investments in developing countries for noncommercial risks such as breach of contract, transfer restriction, expropriation, war and civil disturbance). No such guarantees were sought for this contract, and in the mid-1990s when this contract was signed, there was little in the recent financial history to suggest that for Argentina and Uruguay they might be needed. This is illustrative of the challenges inherent in anticipating and evaluating political risk. In retrospect, Argentina's high levels of government spending and corruption, and rapidly growing foreign debt, were indicators of an unsustainable economic policy. In December 2001, at the peak of its financial crisis, Argentina defaulted on nearly $100 billion in debt. Uruguay's financial problems were largely in reaction to the crisis in neighboring Argentina. Prior to the crisis, Argentina was Uruguay's second largest destination for exports and its largest source of imports. In addition to the loss of these markets, Uruguay was deeply affected when confidence in the Argentine peso fell. As Argentina's financial problems grew, Argentine banks froze their accounts, allowing only limited withdrawals, leading many Argentines to withdraw the large amounts of money they had in Uruguayan banks. Loss of capital for investment and market disruption led to a 10 percent decrease in Uruguay's GDP from 2001 to 2002. Unlike Argentina, however, Uruguay did not enter into large-scale default.

From a contractual standpoint, one option that could have been considered to save the PPP agreement would have been an increase in the tolling rate, to compensate the consortium for the reduced bi-national payments. As previously noted, such an action would have been likely to depress use of the channel, thus reducing the project's economic impact. More importantly in the broader context, however, with citizens rioting in the streets of the capital to protest rising

prices and unemployment, and the Argentine government defaulting on large parts of its foreign debt, raising the tolling rates was not a practical option.

A final lesson from this project is the need to develop a transition plan for the transfer of the project from private to public operation. The Martin Garcia Channel was a Design-Build-Operate-Transfer project with a10 year duration. However, the two countries did not establish at time of contract signing an agreement as to each county's responsibilities at time of transfer. In 2004, discussions between Argentina and Uruguay were unsuccessful in devising a mutually-acceptable plan for channel maintenance after the contract expiration in 2006, and this remained a contentious issue. The public sector partners should have a plan prior to the termination of a contract, to ensure there is no disruption in service.